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FINANCIAL TIMES

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LONGINES
World's Most Honoured Watch

NEWS SUMMARY

GENERAL

Nkomo fears of guerillas abduct children

Black nationalist guerillas loyal to Mr. Joshua Nkomo, co-leader of the Patriotic Front, abducted 120 black Rhodesian school-children and 12 teachers and took them over the border to Botswana.

Last night, Botswana said that 124 of the children had asked to return to Rhodesia and transport would be arranged. The remainder had opted to stay.

The children who are boys and girls, aged between 13 and 20, were escorted at gunpoint from Terenure mission school, the Methodist Church in Rhodesia said.

In Salisbury, the four-man Supreme Executive Council met again without naming the planned 18-man Ministerial Council. The Rev. N. Sibole, a member of the four-man team is a former pupil of the mission school. Page 4

Barre may head new Government

President Giscard d'Estaing, who received Mr. Raymond Barre, Prime Minister, last night, has summoned a meeting of his outgoing Cabinet for to-day. Mr. Barre is expected to be asked to lead the new Government which is likely to be formed early next week. Page 3

Tanker depth charged again

French naval helicopters depth-charged the wrecked super-tanker, Amoco Cadiz, for the second successive day in the hope of draining any remaining oil. Six British ships patrolled south of Guernsey as oil patches approached the Channel Islands.

MPs on the air

Live radio broadcasting of Parliament is to begin on Monday. The chief attractions at the outset will be Prime Minister's Question Time twice weekly and Chancellor Denis Healey's Budget on April 11. Back Page

Soccer arrests

After seeing their team beaten in the European Cup semi-final, first leg, rampaging Liverpool fans looted a cross-channel ferry duty-free shop and stripped a motorway shop at Colliingham, Kent. Up to last night there had been 23 arrests.

Crickets bar

The West Indies Cricket Board of Control has banned all players contracted to Kerry Packer's World Series Cricket from taking part in further matches during Australia's tour of the Caribbean.

Aid for Gypsies

Gypsies in Britain and Ireland are to get help from a £40,000 project and education project on Gypsy life under an EEC £420,000 anti-poverty programme.

Briefly...

The Queen and other members of the Royal Family are to get pay raises, the Treasury said.
Mr. James Callaghan, Prime Minister, arrived back in London after spending a week in Washington.
Twelve passengers were injured in a rail accident on Southern Region's Waterloo to Basingstoke line.
Olga Korbut, 22, the Soviet Olympic gymnast, has retired from the sport, it was reported in Moscow.
Mr. David Duke, Ku Klux Klan leader, who has been served with a deportation order, left Britain yesterday of his own free will.
Two miners were crushed to death at Lady Windsor colliery, Wrexham, Glamorgan.
The Norwegian explorer, arrived at Djibouti aboard his reed boat, Tigris, four months after leaving the Euphrates estuary.

CHIEF PRICE CHANGES YESTERDAY

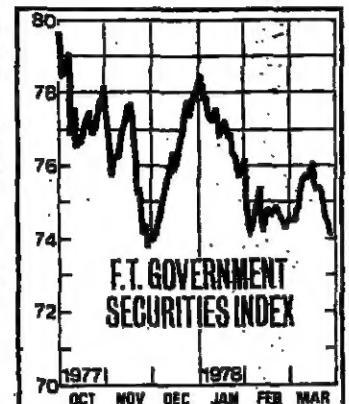
(Prices in pence unless otherwise indicated)

Item	Change
Bentley (S. & W.)	222 + 6
Biddle Hides	84 + 3
Gill and Duffus	222 + 9
Gough Copper	72 + 4
Hinton (A.)	71 + 5
Lilly (F. J. C.)	72 + 5
Lucas Inds.	276 + 7
Marchtel	276 + 7
Pire Holdings	300 + 5
Reckitt and Colman	428 + 10
S and U Stores	121 + 21
Sutcliffe Parke Barnett	243 + 8
Stanley (A. G.)	123 + 10
Western Motor	93 + 5
Royal Dutch	546 + 14
Berglund	220 + 5
Cons. Gold Pld. Aust.	230 + 5
Conzinc-Rhotinto	188 + 13
MTAL Hides	183 + 13

BUSINESS

Fears of interest rate rise hit gilts

GILTS were affected by growing concern about a possible rise in short term interest rates and recorded losses except for the 10-year gilt.



tending to 1. The Government Securities Index fell for the fourth successive trading day, closing 0.39 lower at 74.05.

● EQUITIES were subdued by interest rate fears. The FT 30-share index closed 0.4 lower at 467.7.

● GOLD fell 11½ to 417½ in nervous trading.
● STERLING fell 2.85 cents to \$1.8615. Its trade-weighted index was 62.2 (62.8). The dollar's weighted average narrowed to 6.93 (6.04).

● WALL STREET closed 2.16 lower at 759.62.

● U.S. MONEY supply: M1 \$340.7bn. (\$338.6bn.); M2 \$821.2bn. (\$818.3bn.); commercial and industrial loans at major banks up \$251m. (down \$22m.); Fed funds 6.82 (6.77) per cent; 90-119 day commercial paper unchanged at 6.75 per cent.

Leyland regains market lead

● LEYLAND has regained leadership of the U.K. market from Ford with more than 28 per cent of sales this month. It had 21 per cent at the beginning of the year. Back Page

● THE U.S. and West Germany have started detailed preparations for the Western Economic Summit Conference in Bonn in mid-July. Relations between the two have improved markedly. Back Page
The value of U.S. trade with the Soviet Union fell 27 per cent last year. Page 6

● GAS from the North Sea might be used to generate electricity. Page 8
Norway has reduced its estimates of oil production and revenue. Page 2
British estimates, Page 27

● MR. MAURICE HODGSON takes over the chairmanship of ICI to-morrow. The company's annual report shows the chairman's salary was £95,000 last year. Mr. Hodgson said his take-home pay would be about £25,000, while a comparable job in the U.S. would give £250,000. Page 15

● ASLEF, the train drivers' union, has been told by an inquiry panel to sort out its grievances within British Rail's existing procedures. Page 10

● PRESIDENT CARTER and the president of United States Steel clashed publicly over the 2 per cent rise in steel prices which the company announced on Wednesday. Page 32

● INDLA has called on foreign companies producing "low technology" drugs to reduce their equity holdings in local subsidiaries to 40 per cent. Page 33

● LUCAS Industries pre-tax profit fell to £27.61m. (£24.67m.) in the half year to January 31, 1978, reflecting the effects of its toolroom strike. Page 28 and Lex

● HOUSE OF FRASER raised pre-tax profit 30.8 per cent to a record £38.2m. in the year to January 28, 1978. Page 28 and Lex

City launches new securities body to control standards

BY MARGARET REID

A new voluntary system for the regulation of London's securities markets was launched yesterday under the aegis of the Bank of England. The new body, to be known as the Council for the Securities Industry, is to be headed, as expected, by Mr. Patrick Neill.

Mr. Neill, who is 51, is the Warden of All Souls College, Oxford, and chairman-designate of the Press Council.

The securities council is the outcome of an attempt by the City to fend off the possibility of a legally-based supervisory authority on the U.S. model. Eighteen months ago the Government issued a call for an improved system of voluntary supervision.

Maintenance of the highest ethical standards in conducting business in the securities industry is the first of a number of objectives of the 20-member body listed by the Bank of England yesterday.

The council, whose launching has been blessed by Ministers, will be backed by the various City associations, as well as the Confederation of British Industry, in spite of protests by some Labour MPs at its lack of legal powers.

A levy of 60p on deals of over £5,000 in U.K. stocks and shares is to provide the bulk of the £500,000 annual cost of the council, including the City Take-over Panel, which will continue to provide the bulk of the cost.



MR. PATRICK NEILL

much as at present, but perhaps with wider duties as an arm of the council.

The various City bodies will make some contribution to the cost and the Bank of England will stand ready to make up any shortfall in the financing. Lord Shawcross, the former

Attorney-General who is 76 and has been chairman of the panel throughout his nine-year life, is to remain in that role and will be a member of the new council ex-officio.

Heavier duties will fall on Sir Alexander Johnston, 72, the one-time chairman of the Board of Inland Revenue, who is deputy chairman of the panel. He will also take on the job of deputy chairman of the new council and so will provide an important link between the two bodies.

Much remains to be defined about the exact method of operation of the council, which is expected to meet at least once a quarter, and the way in which complaints or problems would come to it.

Matters within its ambit are likely to include cases of alleged insider trading and objectionable share deals by directors of companies, at least until the Government brings forward its intended legislation relating to these matters.

Supervision of the securities market will be continued. Continued on Back Page Editorial Comment, Page 18

Weizman mission fails to revive peace talks

BY OUR FOREIGN STAFF

PRESIDENT Anwar Sadat of Egypt and Mr. Ezer Weizman, the Israeli Defence Minister, yesterday failed to agree on terms for a resumption of the peace negotiations, which were broken off in January.

After two hours of talks, an Egyptian official said: "The state of the situation continues to be unchanged. Israel changes her position and progress is achieved."

Until Israel shifted its stance, the military and political committees, set up after Mr. Sadat's peace initiative and mission to Jerusalem last November, would not resume their work.

Continued deadlock seemed a foregone conclusion after the Israeli Government's decision not to alter the peace plan which it presented just before Christmas—particularly on the question of Palestinian self-determination—or to agree to abandon Israeli settlements in occupied Arab territories.

Mr. Menachem Begin, the Prime Minister had hoped that

proposals submitted by him to President Carter last week would open the way for a resumption of direct contacts and a mutually acceptable declaration of principles. Optimism, however, rested only on the emphasis placed on Israel's willingness to allow Palestinians—though not the Palestine Liberation Organisation—to participate in talks about the future of the West Bank and to keep in abeyance for five years the question of sovereignty over the territory.

Mr. Sadat, in public, is still adamant that the Israelis should withdraw from all Arab territories occupied in 1967 and that Jewish settlements on them should be dismantled, especially those in Sinai.

In Israel, the view was that Mr. Weizman's trip to Cairo was an exploratory one. It was emphasised by the fact that his visit was officially treated in a very low key—his trip was not confirmed until lunch time after he had departed.

The Egyptian Government is

believed to have wanted the visit kept secret but it was reported by Israeli newspapers earlier this week.

Mr. Weizman was accompanied by Mr. Ezer Barak, the Government's chief legal adviser, which suggested that the question of Jewish settlements would be a matter of priority. The talks were also attended by General Mohammed Abdel-Ghani Gammassi, Egyptian Minister of War.

In the continued absence of Jordan and Syria from the negotiating process, it was believed that the Israeli Defence Minister might have been probing the possibility of a pact falling short of a full peace agreement—possibly involving further demilitarisation of Sinai, an extension of the U.N. buffer zone and a large-scale Israeli withdrawal—though not to the internationally recognised boundary or the pre-June 1967 ceasefire line between the two states.

More Middle East news Page 4

Troubles build up for Sadat Page 15

Zambia cuts sales of copper

BY MICHAEL HOLMAN

LUSAKA, March 30.

ZAMBIA, the world's second-largest copper exporter, announced to-day that it had been forced to cut all sales negotiated for 1978 by 15 per cent, starting with deliveries for May. Deliveries under long-term contracts to Western countries (including Britain, Japan, India and China) will be affected.

In announcing the force majeure declaration, the country's metal-marketing corporation (Memaco) blamed "production and transport constraints" which would take "quite some time to overcome."

Land-locked Zambia's transport difficulties have been worsening over the past six months aggravated by the closure of previous export routes via Angola and earlier via Rhodesia. Officials at the Tanzanian port of Dar-es-Salaam estimated that at least 50,000 tonnes of Zambian copper are held up there, while a further

10,000 tonnes are believed to be stockpiled at the mines. The problem is caused by a 90,000-tonne backlog of Zambian copper in the hands of intermediaries nine-tenths of Zambia's trade. The backlog is due to inadequate handling facilities, a shortage of wagons on the Tanzania-Zambia Railway, and a security of trucks on the road link between the two countries.

The position is further aggravated by a slow turn-round of wagons once they reach Zambia. Production difficulties include a shortage and high turnover of skilled expatriate workers. About 4,000 are working on the copper belt, between 500 and 1,000 short of requirements. In addition, the country's foreign exchange and transport problems have led to a shortage of spares and equipment.

John Edwards, Commodities Editor, writes: Copper prices jumped sharply on the London Metal Exchange on the news that

Zambia was going to declare force majeure, even though it had been anticipated for some time. But values eased in later trading when the cut was announced at 15 per cent, starting from May, since the market had been forecasting a reduction of at least 20 per cent.

Based on last year's reduced Zambian output of 650,000 tonnes—the lowest level for ten years—the 15 per cent cut in sales is equal to 97,500 tonnes a year or just over 8,100 tonnes a month. This compares with world stocks of copper estimated to exceed 2m. tonnes, with nearly 800,000 tonnes in the London Metal Exchange warehouses in Europe.

There is thus no shortage of copper supplies. But prices have risen by nearly £100 a tonne to more than £700 a tonne in the past month in anticipation of production and sales cuts by producers suffering heavy losses at present market price levels. Details Page 39

CONTENTS OF TO-DAY'S ISSUE

European news	23	Technical page	11	Intl. Companies	22-33
American news	5	Management page	15	Euromarkets	32
Overseas news	4	Arts page	17	Wall Street	28
World trade news	6	Leader page	18	Foreign Exchanges	28
Home news—general	7-9	U.K. Companies	28-31	Farming, raw materials	39
—labour	10	Mining	31	U.K. stock market	40

FEATURES

Trouble brewing up for Mr. Begin	18	Tunisian economy: Sudden chill	4	Around Britain: Mid-Wales 16	
North Sea oil: Problems beneath the surface	27	Austrian exports	6	New Zealand airline merger	33
Greece: Karamanlis and his opposition	2	Urban decay: "Reversing engines of exodus"	12	F.T. SURVEY Communications	19-26

Appointments	14	Men and Matters	38	ANNUAL STATEMENTS	
Business for Sale	34	Money Market	38-39	AC Cars	31
Crossword	36	Property	39	APV Hides	29
Entertainment Index	39	Share Indexes	40	Anglo Amer. Ind.	31
Food Prices	40	Today's Events	40	British Ind.	31
FTAC Shares Guide	42-43	TV and Radio	41	Cable Metal Hides	31
Letters	44	Weather	41	Grain Metal Hides	31
Lex	45	West London Rates	42	Grain Metal Hides	31
Leisure	46			Grain Metal Hides	31

For latest Share Index: phone 01-246 8026

BP to invest a record £1.25bn.

BY RAY DAFTER, ENERGY CORRESPONDENT

BRITISH PETROLEUM expects to invest a record £1.25bn. this year, 57 per cent more than last year. About half the money will be spent in the U.K., particularly on offshore exploration and production.

The investment programme, outlined yesterday by Sir David Steel, chairman of BP, means that the company is returning to the record levels of expenditure during 1976 when the development of the Trans-Alaskan pipeline and the big Forties Field in the North Sea accounted for the bulk of the £1bn. spent.

About £500m. is earmarked for oil and gas exploration and production this year. The annual report confirms that BP is planning to spend £1.25bn. over the next few years on the development of the Magnus Field in the North Sea.

However, capital allowances for the Magnus development can be claimed against the Forties Field tax bill.

Sir David said that about £200m. would be invested at a number of the company's refineries. Although the industry had been hit by serious retraining capacity in Europe—a problem, he said, which had to be tackled by both governments and companies—there was a need for more facilities to make high grade oil products.

It was important to prepare refineries for the day when oil would be scarcer and more expensive and reserved primarily for chemical manufacturing and transport needs.

Of the remaining planned investment, about £200m. would go into the group's marketing operations and a further £200m. on expanding chemical activities.

New image

Although BP would be channelling more funds into its growing coal business, the group had no plans for major diversification outside its existing sphere of operations.

However, the company is planning to change "articles of association to reflect its growing international image. Shareholders will be asked at the annual meeting on May 4 to endorse a move aimed at lifting a ban on non-British directors of the company."

"We feel it is discriminatory to say a director of this company must be British," said Sir David. "We are international and it is right that we should be seen as such."

While there was no "immediate intention" of appointing foreign directors, it was recognised that at some future date a Board member from outside the U.K. might provide valuable

help and experience. The proposed changes—which would also end a ban on Board meetings being held outside England—would pave the way for the day when the U.S. oil group, Sohio, became a subsidiary of BP. It is possible that a Sohio director will eventually join the BP Board.

BP's stake in Sohio grows as the flow of oil through the Trans-Alaskan pipeline builds up. By this summer the volume should reach 1.2m. barrels a day, giving BP a 51 per cent interest in the U.S. company. Sohio would be consolidated into BP's accounts, although it would continue as a U.S.-managed company.

BP Chemicals Investment, Page 7
Men and Matters, Page 18
North Sea oil problems, Page 27
Annual report, Page 30
Lex, Back Page

Sir David also confirmed that BP had been involved in informal and unofficial talks about the State of Alaska's possible involvement in the pipeline system. The group has a 15.84 per cent interest in the pipeline with Sohio holding a further 33.34 per cent stake.

Mr. Robert Adam, a managing director, said that the possibility of a State involvement in the pipeline had been known about since 1970. BP had always been interested in such a proposal. However, any proposal must come initially from the State of Alaska.

There were now more hopeful signs that a trans-U.S. pipeline would be completed to carry Alaskan crude from the West Coast, Mr. Adam added.

In the meantime, Sohio and BP had taken steps to carry much of the oil to the East Coast via the Panama Canal. "One doesn't envisage oil being left in the ground," although it was recognised that the West Coast alone could not absorb all of the Alaskan output.

In the U.K., Sir David said that BP was now spending £5m. a year merely on providing the government with information about its business operations, taxation liabilities and North Sea plans.

"It is an onus on our people who have to produce bits of paper but who are never quite certain what these bits of paper are needed."

In New York

March 30 Previous

Spd 11.850-1.864 11.879-1.850
3 month 0.00-0.00 0.00-0.00
12 month 0.00-0.00 0.00-0.00



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Bonn welcomes effect of U.S. accord on markets

BY JONATHAN CARR

— BONN, March 30.

SENIOR West German Government officials believe that this month's accord with the U.S. on steps to help stabilise the dollar is fulfilling its objective and that there is a fair chance of relative calm in coming months on the exchange markets.

This assessment is in large measure shared by the Bundesbank. It reflects strong West German satisfaction at America's readiness to act more positively to support its currency and to attack the basic problems underlying the dollar's fall.

In an interview, State Secretary Manfred Lahnstein of the Finance Ministry stressed that the sums involved in the new accord (including a doubling of the federal reserve swap arrangement with the Bundesbank) were not in themselves the key factor. Had they been, no new accord would have been needed since

the sums already agreed between the two countries in January had not been used up.

The essence of the issue was political, Herr Lahnstein said — a readiness to enlarge the scope of possible action clearly to show you cared about the problem and were prepared to deal with it. This was why the German side was so positive about the role of the U.S.

Herr Lahnstein, who was the German official chiefly involved in preparing the agreement, declined to comment on rumours that as a further step the U.S. might now be ready to sell gold. But he did describe suggestions that the U.S. might sell foreign-denominated bonds as "not a practical issue for the time being." There was widespread speculation that such action was in the offing before the March accord was announced. The

absence there of any direct reference to it was one factor contributing to the depressed market reaction.

Herr Lahnstein said the Germans had analysed the U.S. case on the bonds issue and "we think they had some very valid arguments against it. Even without such action, the breathing space created by the accord may be quite an extended one. I am relatively optimistic."

He stressed that the accord was both an economic and a monetary one — although the sections covering energy policy and trade had passed in large measure unnoticed. The object was to counter disorderly exchange market conditions while the underlying economic conditions worked through and planned policy measures (such as energy saving) could be implemented.

He believed that in the U.S. the urgency of an effective energy programme and an anti-inflationary policy was felt more generally even than six months ago.

In common with other German Government officials he was quick to contradict the thesis that an attack on inflation in the U.S. might itself involve lower economic growth and reduced export prospects for America's trading partners. "On the contrary, it is only a stability-orientated policy which is able to create growth if we talk in real, not nominal, terms."

Finally, Herr Lahnstein noted that earlier public manifestations of disagreement between West Germany and the U.S. on economic and monetary policy had largely vanished. This was due not just to political caution but to "objective factors. Everyone understands better than before that we face a complicated situation which cannot be solved just by pressing a button — on one side or the other."

Authenticity of Moro letter doubted

By Paul Setts

ROME, March 30.

WHILE POLICE handwriting experts were today checking the authenticity of a letter purportedly written by the kidnapped former Premier Sig. Aldo Moro, the authorities and his colleagues in the Christian Democrat Party were highly dubious that Sig. Moro wrote it voluntarily.

However, if the handwriting does turn out to be genuine, it is a reasonable indication that the party president, who was kidnapped two weeks ago by terrorists claiming to belong to the Red Brigades' urban guerrilla movement, is still alive.

There was considerable speculation today about the circumstances under which such a letter would be written, with the prevailing view suggesting that Sig. Moro was either heavily drugged or under the threat of immediate execution.

Photocopies of the five-page letter were found late last night in various major Italian cities, including Rome, Milan, Turin and Genoa, together with a so-called "third communiqué" from the Red Brigades.

In the letter, addressed to Sig. Francesco Cossiga, the Interior Minister, Sig. Moro says he is under the "complete" control of the terrorists and risks being forced to talk in "a dangerous and unsavoury way." He also says that he is looked upon as a "political prisoner" and is undergoing trial to establish his political responsibilities as head of the Christian Democrat Party.

Although no direct requests are contained in the letter, there is a tentative appeal to the Vatican to intervene.

Four years ago, when the Genoa magistrate, Sig. Mario Sossi, was kidnapped and "tried" by the Red Brigades, a letter from the magistrate addressed during his captivity to the Italian head of state set out the terms imposed by the terrorist group for his release. They involved freeing Red Brigades members in jail. Sig. Sossi was subsequently released and has since said that he was forced to write the letter.

Meanwhile, no established political party support has emerged for a suggestion by the Turin daily newspaper, *La Stampa*, that Sig. Giovanni Leone, the Italian President, should resign and be replaced automatically by Sig. Moro.

However, the veteran Republican Party leader, Sig. Ugo La Malfa, called today for the immediate resignation of Sig. Leone, whom he claimed was inadequate for his task.

Barre expected to remain Premier

BY ROBERT MAUTHNER

THE NEW French Government

is expected to be formed early next week, following the extensive consultations which President Giscard d'Estaing has had over the past few days with political, trade union and employers' leaders.

Though there has been no official announcement on the subject, political commentators are confidently predicting that M. Raymond Barre, the Prime Minister, will be asked to lead the new administration. The Premier is expected to present the formal resignation of his outgoing government at an extraordinary Cabinet meeting tomorrow and his own appointment may be announced immediately afterwards, or on Monday.

In line with his policy of establishing more normal relations between the Government and the opposition, President Giscard today had talks lasting an hour with M. Georges Marchais, the Communist leader, and also received the leader of the Communist-led CGT union, M. Georges Seguy.

M. Marchais, who was smiling broadly as he emerged from the Elysee Palace, did not, however, give the impression that there had been a great meeting of minds with the President. Reading from a text which had been prepared before his discussions

with the President, as M. François Mitterrand, the Socialist leader, had done two days ago, M. Marchais said that he had merely accepted M. Giscard d'Estaing's invitation in order to explain his party's demands. Predictably, these demands have not changed since the Left's defeat at the general election on March 19. Both M. Marchais and M. Seguy insisted that the national minimum wage should be raised immediately by 37 per

cent, to Frs.2,400 (£277) per month, while the Communist leader also demanded a return to proportional representation in parliamentary and other elections. M. Marchais took advantage of

the occasion to stress the Communist Party's continued support of the union of the Left, the battered alliance with the Socialists which, now the election is over, stands little chance of being resuscitated in anything like its old form.

M. Seguy, whose union, with 2.4m. members is the largest in the country, called for the immediate opening of negotiations on wages, social security benefits and working conditions, between

the Government, trade unions and employers' organisations. Though he did not openly threaten strike action if the CGT's demands were not satisfied, M. Seguy warned that his union would not accept any delays once the new government was formed.

Meanwhile, the Gaullist Party, which prides itself on its internal unity, has been shaken by a dispute over the presidency of the National Assembly for which there are now three Gaullist candidates: M. Jacques Chaban-Delmas, a former Prime Minister, who is running for the Speakership against the present incumbent, M. Edgar Faure, has accused the Gaullist leader, Y. Jacques Chirac, of double-dealing.

In a letter to Gaullist Members of Parliament, M. Chaban-Delmas claimed that M. Chirac had first of all supported his candidature but had subsequently changed his position and had invited the party's central committee to back M. Faure at a meeting which M. Chaban-Delmas had been unable to attend.

Hope in IG-Metal dispute

BY ADRIAN DICKS

BONN, March 30.

A GLIMMER of light in the southwest German engineering industry dispute appeared this afternoon, after both union and employers' leaders admitted that their continuing negotiations had produced "somehow more movement."

Details of what development had caused this distinct — if still cautious — change of tune were not known. Observers following the Stuttgart negotiations between the two sides were reluctant to assume that the end of the dispute was yet in sight.

However, there was reported to have been some progress in the most difficult area of discussion in this year's wage negotiations — in the North Westphalia — North Baden region. This is the demand of the engineering industry union, IG-Metal, for guarantees of job security and of

job classification that would prevent men in skilled occupations from being put back into lower wage categories as a result of technological change.

Today, IG-Metal called several more engineering works in North Westphalia — North Baden out on strike, bringing the total of its members now directly involved to about 90,000. Some 148,000 workers, including many non-union members, are locked out by the employers.

There was further criticism of the lock-out tactic today when the Deutsche Gewerkschaftsbund (DGB), the equivalent of the TUC, organised protest rallies in Stuttgart and other towns, while thousands of lawsuits against the employer's use of the lock-out have now been brought by individual workers in the labour courts.

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Brezhnev urges boost in energy output

BY DAVID SATTER

MOSCOW, March 30.

MR. LEONID BREZHNEV, the Soviet President, today visited Tyumen, centre of the rich West Siberian oil and gas region, and stressed to party leaders the necessity of increasing energy production from the region and using effectively existing reserves.

The Soviet news agency Tass reported that Mr. Brezhnev, who was accompanied by the Defence Minister, Mr. Dmitri Ustinov, issued a number of specific directions to executives pointing out

that West Siberian development was an important part of the 1976-80 five-year plan.

Tass gave no indication what those instructions were but Mr. Brezhnev's trip to Tyumen, which immediately followed a visit by Mr. Alekssei Kosygin, the Premier, may reflect Soviet concern about energy production in West Siberia — the anticipated source of half the country's oil by 1980.

Soviet officials told a party of visiting Western journalists in January that the giant Sannor

oil fields in the Tyumen region have now reached peak production of 150m. tonnes. This was sooner than expected. Soviet oil production as a whole in 1977 failed to meet its target.

The Russians have stressed repeatedly that they are confident that the country has vast oil reserves and new wells will be put into operation as old ones expire, but the operational problems involved in exploiting these resources have lent a note of uncertainty to these assurances.

Meanwhile, no established political party support has emerged for a suggestion by the Turin daily newspaper, *La Stampa*, that Sig. Giovanni Leone, the Italian President, should resign and be replaced automatically by Sig. Moro.

However, the veteran Republican Party leader, Sig. Ugo La Malfa, called today for the immediate resignation of Sig. Leone, whom he claimed was inadequate for his task.

Citibank opens office in Lisbon

BY JIMMY BURNS

LISBON, March 30.

CITIBANK, the second largest U.S. bank, has opened a representative office in Lisbon, the first foreign bank to do so since the revolution on April 25, 1974. Negotiations between Citibank and the Portuguese Government on setting up the office began last year following the promulgation in October 1976 of a decree law regulating the activities of foreign financial institutions in Portugal.

By the terms of the present constitution, Citibank will not be allowed banking operations of

any kind, or to render any service considered a banking activity. However, because of the decree law it will have greater freedom to promote the financing of industrial projects, and imports and exports, and also to set up representative offices in Lisbon. These were all nationalised after the revolution.

The establishment of Citibank's representative office here is seen as reflecting the growing confidence among international financial circles over

Portugal's capacity for economic recovery. Citibank officials have confirmed that they are prepared to provide long-term loans to stimulate certain industrial projects yet to be decided. Other foreign banks have also applied to the Bank of Portugal to set up representative offices in Lisbon. These include three more U.S. banks, among whom is believed to be the Chase Manhattan Bank. Their applications are still awaiting formal authorisation from the Ministry of Finance.

In fact, the provincial elections will strengthen the centrist Christian Democrats' position in the administration of the country's 11 provinces. The impact of today's vote will also show through in the Upper House of Parliament in 1980.

Members of the Upper House are nominated not by the electorate directly but by the provincial councils. About half of the 75 Upper House seats are open for re-election in 1980.

The Christian Democrats took 35 per cent. of the votes, compared with 32 per cent. in last year's general election and 31 per cent. in the provincial elections of 1974. The Liberals saw their vote fall to 17 per cent. from 18 and 19 per cent. in the two previous polls. Labour increased its share of the vote to 33.8 per cent. from 33.8 per cent. last year and from 29 per cent. in 1974.

Norwegians again reduce oil estimates

BY FAY GJETER

OSLO, March 30.

THE NORWEGIAN Government has again substantially reduced its estimates of oil production and revenue over the next few years, partly because of increasing official scepticism about operating companies' forecasts.

The revised economic programme for 1979-81, due to be published shortly, will put the total growth value of petroleum production on Norway's continental shelf, during the four years, at only Nkr.119.5bn. (£20bn.). This compares with a forecast of Nkr.142bn. made in only a year ago, when the four-year programme was first published.

State revenues from oil activities this year are now foreseen at only Nkr.8bn., compared with the original estimates of Nkr.10.5bn.

Mr. Bjartmar Gjerde, the Oil and Energy Minister, says that the new figures take account of two factors: the hold-ups and problems that have plagued the development of Norwegian fields so far, and the fact that the Government is relying on the forecasts of its own experts rather than those of the operating companies, since the latter have tended in the past to be over-optimistic.

Before 1975, the Government based its projections exclusively on oil-company forecasts. Mr. Gjerde told the Oslo newspaper *Aftenposten*. From that year, it began making use of the theoretical figure half-way between the commercial forecasts and those of the state oil directorate. The former proved consistently over-optimistic, however, and since July 1977 official calculations have been based exclusively on the directorate's figures.

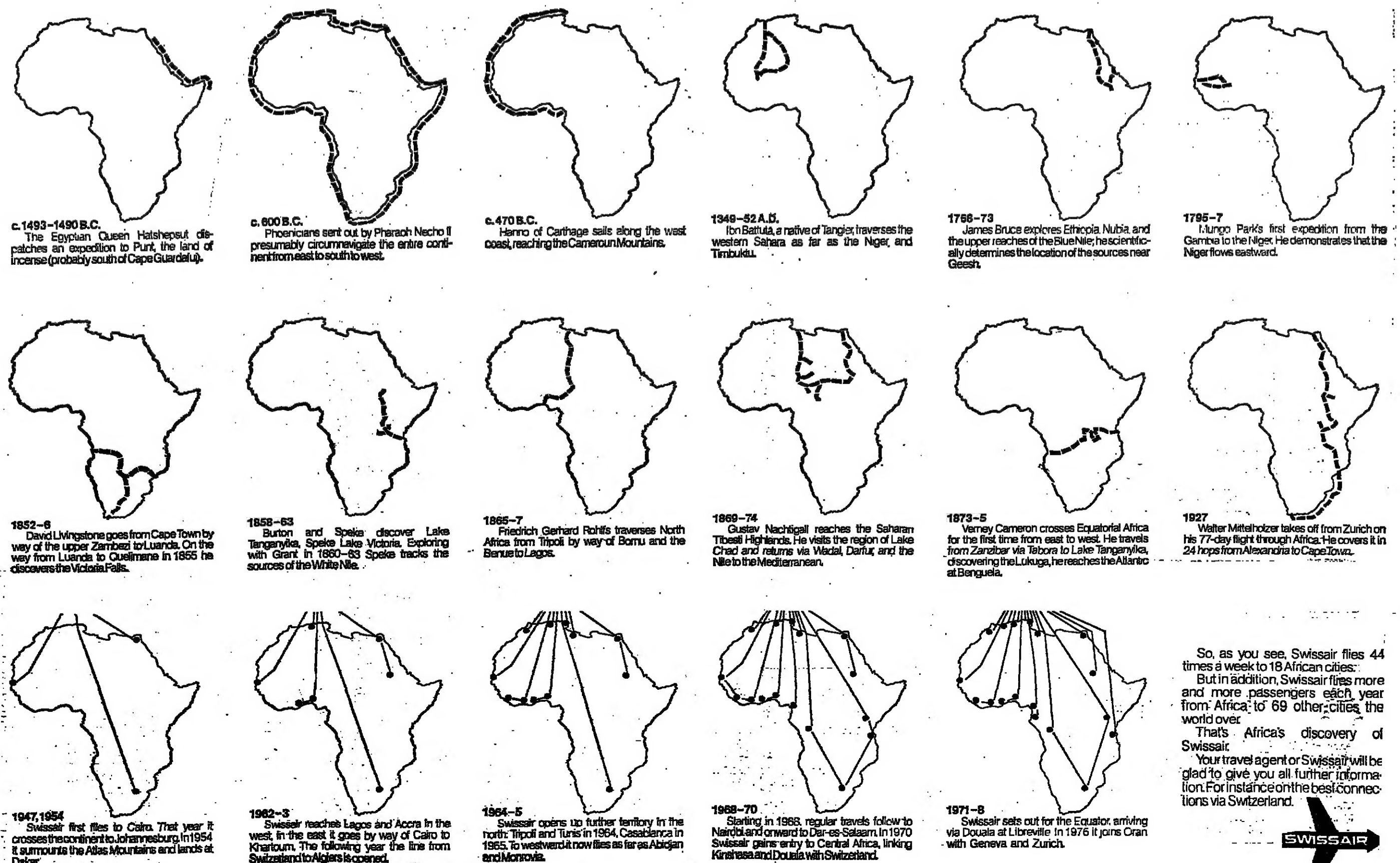
In addition to this revision of forecasting methods, he said, last year saw several serious delays to production and development.

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BOND DRAWING

GRANGES AB 9% U.S. Dollar Bonds 1985

S. G. WARBURG & CO. LTD., announce that the redemption instalment of U.S.\$1,250,000 due 1st May, 1978 has been met by purchases in the market to the nominal value of U.S.\$370,000 and by a drawing of bonds to the nominal value of U.S.\$880,000.

The distinctive numbers of the bonds, drawn in the presence of a Notary Public, are as follows:

6	27	48	59	90	112	132	155	175	195
217	239	260	281	301	323	344	365	387	407
429	449	472	492	513	535	556	578	598	619
640	661	681	704	725	747	768	789	809	832
852	874	895	916	937	958	979	1000	1022	1042
1064	1084	1105	1126	1147	1168	1189	1210	1231	1252
1273	1294	1315	1336	1357	1378	1399	1420	1441	1462
1483	1504	1525	1546	1567	1588	1609	1630	1651	1672
1693	1714	1735	1756	1777	1798	1819	1840	1861	1882
1903	1924	1945	1966	1987	2008	2029	2050	2071	2092
2113	2134	2155	2176	2197	2218	2239	2260	2281	2302
2323	2344	2365	2386	2407	2428	2449	2470	2491	2512
2533	2554	2575	2596	2617	2638	2659	2680	2701	2722
2743	2764	2785	2806	2827	2848	2869	2890	2911	2932
2953	2974	2995	3016	3037	3058	3079	3100	3121	3142
3163	3184	3205	3226	3247	3268	3289	3310	3331	3352
3373	3394	3415	3436	3457	3478	3499	3520	3541	3562
3583	3604	3625	3646	3667	3688	3709	3730	3751	3772
3793	3814	3835	3856	3877	3898	3919	3940	3961	3982
4003	4024	4045	4066	4087	4108	4129	4150	4171	4192
4213	4234	4255	4276	4297	4318	4339	4360	4381	4402
4423	4444	4465	4486	4507	4528	4549	4570	4591	4612
4633	4654	4675	4696	4717	4738	4759	4780	4801	4822
4843	4864	4885	4906	4927	4948	4969	4990	5011	5032
5053	5074	5095	5116	5137	5158	5179	5200	5221	5242
5263	5284	5305	5326	5347	5368	5389	5410	5431	5452
5473	5494	5515	5536	5557	5578	5599	5620	5641	5662
5683	5704	5725	5746	5767	5788	5809	5830	5851	5872
5893	5914	5935	5956	5977	5998	6019	6040	6061	6082
6103	6124	6145	6166	6187	6208	6229	6250	6271	6292
6313	6334	6355	6376	6397	6418	6439	6460	6481	6502
6523	6544	6565	6586	6607	6628	6649	6670	6691	6712
6733	6754	6775	6796	6817	6838	6859	6880	6901	6922
6943	6964	6985	7006	7027	7048	7069	7090	7111	7132
7153	7174	7195	7216	7237	7258	7279	7300	7321	7342
7363	7384	7405	7426	7447	7468	7489	7510	7531	7552
7573	7594	7615	7636	7657	7678	7699	7720	7741	7762
7783	7804	7825	7846	7867	7888	7909	7930	7951	7972
7993	8014	8035	8056	8077	8098	8119	8140	8161	8182
8203	8224	8245	8266	8287	8308	8329	8350	8371	8392
8413	8434	8455	8476	8497	8518	8539	8560	8581	8602
8623	8644	8665	8686	8707	8728	8749	8770	8791	8812
8833	8854	8875	8896	8917	8938	8959	8980	9001	9022
9043	9064	9085	9106	9127	9148	9169	9190	9211	9232
9253	9274	9295	9316	9337	9358	9379	9400	9421	9442
9463	9484	9505	9526	9547	9568	9589	9610	9631	9652
9673	9694	9715	9736	9757	9778	9799	9820	9841	9862
9883	9904	9925	9946	9967	9988	10009	10030	10051	10072
10093	10114	10135	10156	10177	10198	10219	10240	10261	10282
10303	10324	10345	10366	10387	10408	10429	10450	10471	10492
10513	10534	10555	10576	10597	10618	10639	10660	10681	10702
10723	10744	10765	10786	10807	10828	10849	10870	10891	10912
10933	10954	10975	10996	11017	11038	11059	11080	11101	11122
11143	11164	11185	11206	11227	11248	11269	11290	11311	11332
11353	11374	11395	11416	11437	11458	11479	11500	11521	11542
11563	11584	11605	11626	11647	11668	11689	11710	11731	11752
11773	11794	11815	11836	11857	11878	11899	11920	11941	11962
11983	11999	12013	12028	12043	12058	12073	12088	12103	12118
12133	12148	12163	12178	12193	12208	12223	12238	12253	12268
12283	12298	12313	12328	12343	12358	12373	12388	12403	12418
12433	12448	12463	12478	12493	12508	12523	12538	12553	12568
12583	12598	12613	12628	12643	12658	12673	12688	12703	12718
12733	12748	12763	12778	12793	12808	12823	12838	12853	12868
12883	12898	12913	12928	12943	12958	12973	12988	13003	13018
13033	13048	13063	13078	13093	13108	13123	13138	13153	13168
13183	13198	13213	13228	13243	13258	13273	13288	13303	13318
13333	13348	13363	13378	13393	13408	13423	13438	13453	13468
13483	13498	13513	13528	13543	13558	13573	13588	13603	13618
13633	13648	13663	13678	13693	13708	13723	13738	13753	13768
13783	13798	13813	13828	13843	13858	13873	13888	13903	13918
13933	13948	13963	13978	13993	14008	14023	14038	14053	14068
14083	14098	14113	14128	14143	14158	14173	14188	14203	14218
14233	14248	14263	14278	14293	14308	14323	14338	14353	14368
14383	14398	14413	14428	14443	14458	14473	14488	14503	14518
14533	14548	14563	14578	14593	14608	14623	14638	14653	14668
14683	14698	14713	14728	14743	14758	14773	14788	14803	14818
14833	14848	14863	14878	14893	14908	14923	14938	14953	14968
14983	14998	15013	15028	15043	15058	15073	15088	15103	15118
15133	15148	15163	15178	15193	15208	15223	15238	15253	15268
15283	15298	15313	15328	15343	15358	15373	15388	15403	15418
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15583	15598	15613	15628	15643	15658	15673	15688	15703	15718
15733	15748	15763	15778	15793	15808	15823	15838	15853	15868
15883	15898	15913	15928	15943	15958	15973	15988	16003	16018
16033	16048	16063	16078	16093	16108	16123	16138	16153	16168
16183	16198	16213	16228	16243	16258	16273	16288	16303	16318
16333	16348	16363	16378	16393	16408	16423	16438	16453	16468
16483	16498	16513	16528	16543	16558	16573	16588	16603	16618
16633	16648	16663	16678	16693	16708	16723	16738	16753	16768
16783	16798	16813	16828	16843	16858	16873	16888	16903	16918
16933	16948	16963	16978	16993	17008	17023	17038	17053	17068
17083	17098	17113	17128	17143	17158	17173	17188	17203	17218
17233	17248	17263	17278	17293	17308	17323	17338	17353	17368
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17533	17548	17563	17578	17593	17608	17623	17638	17653	17668
17683	17698	17713	17728	17743	17758	17773	17788	17803	17818
17833	17848	17863	17878	17893	17908	17923	17938	17953	17968
17983	17998	18013	18028	18043	18058	18073	18088	18103	18118
18133	18148	18163	18178	18193	18208	18223	18238	18253	18268
18283	18298	18313	18328	18343	18358	18373	18388	18403	18418
18433	18448	18463	18478	18493	18508	18523	18538	18553	18568
18583	18598	18613	18628	18643	18658	18673	18688	18703	18718
18733	18748	18763	18778	18793	18808	18823	18838	18853	18868
18883	18898	18913	18928	18943	18958	18973	18988	19003	19018
19033	19048	19063	19078	19093	19108	19123	19138	19153	19168
19183	19198	19213	19228	19243	19258	19273	19288	19303	19318
19333	19348	19363	19378	19393	19408	19423	19438	19453	19468
19483	19498	19513	19528	19543	19558	19573	19588	19603	19618
19633	19648	19663	19678	19693	19708	19723	19738	19753	19768
19783	19798	19813	19828	19843	19858	19873	19888	19903	19918
19933	19948	19963	19978	19993	20008	20023	20038	20053	20068

On 1st May, 1978 there will become due and payable upon each bond, drawn for redemption, the principal amount thereof, together with accrued interest to said date at the office of:-

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30 Gresham Street, London EC2P 2EB

or one of the other paying agents named on the bonds.

Interest will cease to accrue on the bonds called for redemption on and after 1st May, 1978 and bonds so presented for payment must have attached all coupons maturing after that date.

U.S.\$16,250,000 nominal amount of bonds will remain outstanding after 1st May, 1978.

The following bonds drawn for redemption on dates stated below have not as yet been presented for payment.

1st May, 1978
No's: 4258 : 5170 : 5248 : 5810

1st May, 1977
No's: 2827 : 3009 : 3024 : 3055 : 4240 : 4255 : 4271 : 4286 : 4301
4316 : 4772 : 5061 : 5076 : 5716 : 5762 : 5807 : 5823 : 5889
7571 : 16427

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31st March, 1978

FINANCIAL TIMES

BRACKEN HOUSE, 11 CANON STREET, LONDON EC2A 4

AMERICAN NEWS

Carter to outline inflation policy after his return

BY JUREK MARTIN, U.S. EDITOR

WASHINGTON, March 30.

ACTIONS BY the Carter Administration over the last 24 hours on farm price supports, the latest round of steel price increases and the planned pay rise for federal employees illustrate the general direction the Government's anti-inflation policies are likely to take.

President Carter said at his news conference in Brasilia this morning that new announcements on inflation would be made after his return from his foreign travels next week. Speaking in Chicago this morning, Vice-President Walter Mondale confirmed the general assumption that wage and price controls are not a live option at this stage. The Administration will probably engage in a series of small actions, combined with some tougher talking to the

private sector. This is essentially the approach recommended by Mr. Barry Bosworth, head of the Council on Wage and Price Stability, whose emergence as the most vocal advocate of anti-inflationary policies masks the fact that his actual policy-making role is less great than several of his Administration colleagues. Nevertheless, Mr. Bosworth's advice, at least in principle, appears to have been taken over the following items.

● The Administration's farm income plan was unveiled late yesterday. This is designed to head off what are considered to be highly inflationary proposals already passed by the Senate along much more expanded lines and was accompanied by the

explicit warning that the President would veto any Bill that incorporated any of the Senate's more contentious provisions. The Administration's plan would boost farm incomes by \$3.4bn. a year by making additional payments to corn and cotton growers who let extra land lie fallow this year and by boosting support payments for wheat and soybeans.

● But both Mr. Bob Bergland, the Agriculture Secretary, and Vice-President Walter Mondale, argued that this amounted to no more than fine tuning of existing practice and would not add to consumer food costs.

Mr. Bosworth's leaked memorandum to the President on inflation had recommended opposition to excessive farm aid bills. But the Administration, bargaining for critical support for the Panama Canal treaties, had adopted an ambivalent attitude towards a key amendment to the Farm Bill offered by Senator Talmadge of Georgia.

It is now hoped that the House of Representatives, strengthened by the threat of a Presidential veto, will undo much of the Senate legislation.

● In addition, Administration officials have formally notified union leaders that the pay increase for federal employees scheduled to take effect in October will be held to no more than 5.5 per cent.

● Mr. Carter himself criticised yesterday's 2.2 per cent steel price increase announced by U.S. Steel to cover the costs of the latest miners' pay settlement.

Economic index unchanged

BY OUR OWN CORRESPONDENT WASHINGTON, March 30.

THE U.S. Index of leading economic indicators was unchanged in February from the previous month. However, revised figures issued by the Commerce Department today showed that the sharp decline in January, brought on by bad weather and the coal strike, was less precipitous than had been thought, with the index falling 1.3 per cent, as against the original estimate of 1.9 per cent.

Last year, a similar sharp decline, caused by climatic factors, in January had been reversed in February. Therefore, no change in the index, which points

to future economic activity, may be seen as further evidence of the more modest rate of growth.

This comes as no particular surprise: most private and public forecasts predict that in the first quarter of the year Gross National Product will only increase by 3.4 per cent, at an annual rate.

However, improvement there is anticipated. In a speech due to be given later today in Indianapolis, Mr. Charles Schultze, chairman of the President's Council of Economic Advisers, forecast a "snapback" of the economy in the second quarter.

Peru and banks discuss new loan

LIMA, March 30.

THE PERUVIAN Government has announced that representatives of six foreign banks held a meeting on Monday with President Francisco Morales Bermudez to discuss the national balance of payments problems.

Reliable sources said that the bankers representing U.S., West German, British and Japanese banks offered Peru a loan of \$200m. But the sources said that the banks made such a loan conditional to an authorisation by the International Monetary Fund (IMF) of a stand-by loan to Peru. The IMF is demanding from Peru, according to the sources, drastic austerity measures, including a reduction of Government expenditures, in order to grant the stand-by loan. The banks which participated

in the meeting were Manufacturers Hanover, Citibank, Wells Fargo, Drexler Bank, Bank of Nova Scotia and Bank of Tokyo. These belong to an international co-ordinating committee of the commercial creditors of Peru, chaired by Manufacturers Hanover.

The Government also said that a senior official delegation, headed by the chairman of the joint chiefs of staff, General Pedro Richter, flew to Moscow yesterday to negotiate with the Soviet Union for a restructuring of the Peruvian debt to the USSR. Gen. Richter said that Peru is facing a "very tight" schedule of repayments of foreign debt between now and 1980. He said that similar actions are being taken with

other creditor countries.

Meanwhile, in New York, Manufacturers Hanover confirmed that the meeting had taken place on Monday in Lima. Negotiations have been under way since mid-February, the bank said.

Manufacturers Hanover said that the Peruvian authorities had announced their intentions of introducing additional economic stabilisation measures which they expect to ensure Peruvian eligibility to draw under its stand-by agreement with the IMF which was signed in November. The banks consider that eligibility to be one pre-requisite for the granting of any new commercial loan to help the national balance of payments.

AP-DJ

All signs point to June elections in Canada

BY VICTOR MACKIE IN OTTAWA

ALL the signs in Canada now point to a June election with the dissolution of parliament expected in mid-April. Many members of parliament, including some Cabinet ministers, have left the country for an Easter break in to build up their strength in anticipation of a rigorous campaign this spring.

Parliament is in recess and is due to resume sitting on April 3. Two weeks later the MPs expect to be plunged into a campaign with Mr. Pierre Trudeau, the Prime Minister, seeking re-election of his Liberal government.

A factor that may change the Prime Minister's mind and make him delay calling a Spring election is the decline of the Canadian dollar. It tumbled to a new low on New York money markets this week as commercial demands for U.S. dollars put the currency under heavy pressure. At the close of trading on the inter-bank wholesale market on Monday the dollar was changing hands at 88.38 U.S. cents, down nearly a third of a cent from last week's close of 88.68. It saw the Canadian dollar's lowest level since May 1953.

With the House in recess, final approval of legislation to permit construction of the \$10bn Alaska highway natural gas pipeline in northern Canada has been delayed. The Government had

hoped to have it passed before the Easter recess. The legislation will also establish a single federal monitoring agency to oversee construction of the huge gas pipeline.

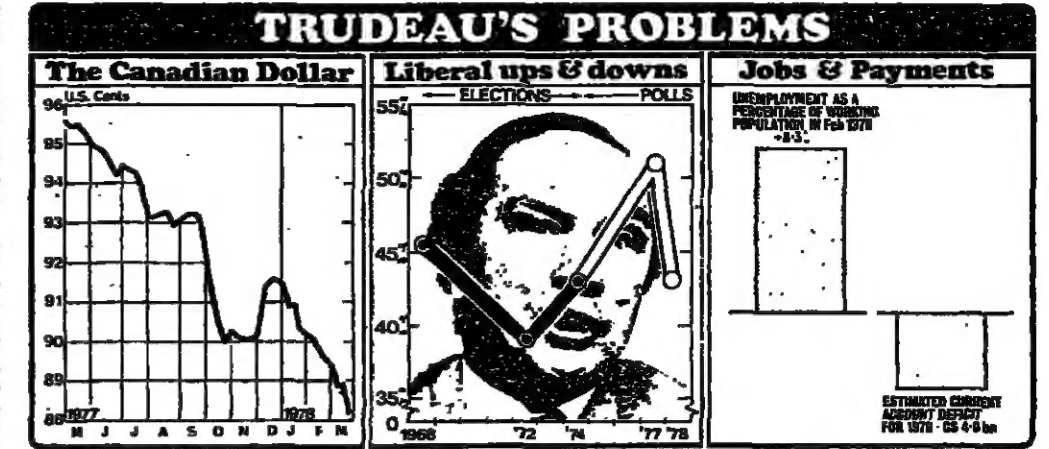
The bill would have to be reintroduced into the Commons sometimes next autumn. This would create problems for the pipeline consortium. It might be reluctant to make further

the senate just before the recess. The government proposals would tighten the rules for directors of bankrupt corporations. The bill will make directors of

conference Board in Canada said this week that considerable improvement in Canada's trade balance is expected this year and should provide the basic stimulus for the economy in 1978.

Despite the weakness of the 1977 fourth quarter performance the outlook for the overall economic activity on a quarterly basis in 1978 remains as it was in December, one of moderate growth, said the Conference Board. However, the recent performance of the economy does reveal a continued reluctance on the part of Canadian businessmen to spend. This is consistent both with the current stage of the business cycle and recent surveys of business intentions. Real GNP is currently forecast by the Board to increase by 4.5 per cent in 1978 following growth at a seasonally adjusted annual rate of 3.2 per cent in the fourth quarter of 1977.

Canada's trade balance improved significantly during the fourth quarter of last year and The Conference Board expects this sector to be an important source of strength throughout 1978. The continuing recovery in the U.S. economy this year, together with the improvement in Canada's competitive position in foreign markets after the earlier depreciation of the Canadian dollar, should result in rapid export growth again in 1978, said the Board.



The passage of the legislation was delayed in the Commons by prolonged debate. There is worry that a general election might be called before the bill is passed through the Senate, but Liberal MPs doubt that Mr. Trudeau would call the election if the bill had not been passed by mid-April. If parliament was dis-

financial commitments until the project had been approved by parliament. Other key legislation to be debated by parliament when it returns after Easter is a revision of federal bankruptcy laws. They would give additional rights to wage earners of companies which go bankrupt. Introduced into

a bankrupt corporation personally liable for unpaid wages and contributions owed to employees. Mr. Trudeau, if he follows what appears to be the Liberals' election plan and calls a spring vote, he would be gambling that the Canadian economy would show an upturn this summer before the voters went to the polls. The

New York finances better than expected, says report

NEW YORK, March 30.

A NEW REPORT paints a somewhat brighter picture of New York city's financial condition in the coming year than had previously been predicted.

The report, by the New York state Special Deputy Comptroller, Mr. Sidney Schwartz, says that the city budget is in better shape than predicted by City Hall, and it suggests the city will need to do less short-term borrowing than expected. The report covers fiscal year 1978, starting on July 1.

Mr. Schwartz estimates that the city's fiscal year 1978 budget deficit at \$245m., rather than the \$277m. figure used by the city and in somewhat higher Treasury Department estimates. Mr. Schwartz's prediction of a \$245m. deficit, like the city's higher figure, provides no money for a wage increase for the 225,000 city workers who are holding contract talks with the city.

Turning to the city's short-term cash needs, Mr. Schwartz predicts New York will need to borrow just \$700m., compared with city estimates of \$1bn. to \$1.2bn.

Meanwhile in Washington, Senator William Proxmire released figures which, he said, show that New York city banks can do much more to help solve the city's financial problems.

Senator Proxmire, chairman of the Senate Banking Committee and a critic of further federal aid to New York, says that, while the city was receiving U.S. help, the six largest New York banks were reducing their holdings of city-related securities. According to Sen. Proxmire, the holdings by the six banks of these securities equalled 0.72 per cent of their assets on September 30, 1977, down from 0.92 per cent, in September 1975, before the current seasonal loan programme began.

President goes gently on human rights in Brazil

By Diana Smith

RIO DE JANEIRO, March 30. PRESIDENT CARTER, on his official visit to Brazil, which ended at noon today, has treated the question of human rights delicately. He has gone on a private visit to Rio de Janeiro — to hear what he called "the voice of Brazil" — before flying to Nigeria to-morrow morning.

Compared with the blunt stand he took in the early days of his Administration, inspiring Brazil to break off its military cooperation agreement with the U.S., Mr. Carter's words have fallen as calm on official Brazilian ears.

To-morrow morning, Mr. Carter will cram private talks with six church and civil leaders into less than an hour in Rio de Janeiro. There is dismay here at the brevity of the meetings which, to some observers, appear more symbolic than effective.

Quebec-Labrador iron ore strike spreads further

BY ROBERT GIBBENS

MONTREAL, March 29.

MORE THAN 10,000 members of the United Steelworkers are now idle in the main Canadian iron-ore producing centre, the Quebec-Labrador trough, 300 miles north-east of Montreal, and at the two shipping ports at Sept-les and Port Cartier on the St. Lawrence.

Strikes by the USW and Iron Ore Company of Canada, the largest producer, have shut mines, concentrators, pelletising plants and shipping facilities for a week, and go-slows by union members have brought a suspension of operations at mines, concentrators and shipping facilities of Quebec Cartier Mining Company.

Both iron ore railways from northern mines to shipping ports have been halted and only Wabush Mines continues shipping pellets from its stock-pile. The pelletising plant of Sidbec-Normines, jointly owned by Sidbec, the Government-controlled Quebec steel producer,

the British Steel Corporation and U.S. Steel—was halted last night by the USW.

This means that the estimated 300 annual mine production capacity in the region of nearly 60m. tons in the form of concentrates has been put out of action. The issues are health and safety and, in the case of Iron Ore of Canada, contracting out of maintenance tasks. Wages have not yet been brought up as an issue. Contracts expiring before April 30 are subject to an official limit of a 6 per cent increase this year. The control is to expire at the end of the year. Talks between the union, IOC and a Government mediator were due to start to-day.

U.S. COMPANY NEWS

Ford underpins industry confidence. NBC outlook. Canadian du Pont warning—Page 32

How can you tell if distributed processing will work for you?

Look at the job it's done for Hewlett-Packard.

With two major factories in Southeast Asia, we reduce communications costs by linking the Penang plant with our Singapore facility. Here data is consolidated for transmission to the U.S. Accounting, payroll and inventory is handled locally by HP computers. A similar situation exists in Japan. In Australia and New Zealand, HP sales offices are equipped both for local data processing and long distance communications.

Hewlett-Packard's Distributed Systems Network

All North American manufacturing plants and sales offices have computerised communications links with HP headquarters in California. In smaller offices, they're also used for processing orders, keeping customer files, etc. The larger plants and regional offices use HP 3000 systems for local data processing.

In Brazil, our Campinas manufacturing plant is linked by computer to the main sales office in São Paulo. This in turn communicates with company headquarters. Offices in Venezuela and Mexico have computerised communications systems that handle local accounting management as well.

Most data from Europe is funnelled to the U.S. through our European headquarters in Geneva, although every sales office can communicate directly. In France, Germany and Scotland also use HP computers for accounting, order processing, management information and the like.

At Hewlett-Packard, we began distributing the computer workload around our factories in 1967. Then, in 1971, we instituted a worldwide systems network that has helped us grow to more than \$750 million in shipments, with 43 per cent of our business in computational products.

Today we make 4000 different products at 40 divisions around the world and have offices in 65 countries. This rapid financial and geographical expansion in a highly technical field made the distribution of our data processing an absolute necessity.

We began with the basics.

Small systems went to work in our factories, automating various tests. The next step was linking these minicomputers with other factory systems so they could relay data and programs. Then we tied these computers together so that local management could make decisions based on accurate, up-to-the-minute data.

As we continued to grow, we connected our widespread sales offices with the factories. Today we have 130 high-speed communications systems in 94 locations, sending compressed data via satellite and phone lines. About 12 million words a day come into our company headquarters. Yet the cost is phenomenally low. For example,

we can send a ten thousand word message internationally, in one minute for 45p. On a teleprinter, it would take 16 hours and cost about £400.

We need a system that can change. So do you.

You don't have to choose between a star network, or a circle, or a string. Our way, you can have any or all of them, linked together either as a small, local system or as a worldwide network. And you can hook up an HP system for as little as £3,250. So companies of all sizes can take advantage of our flexible approach to distributed processing. You won't have to throw out your old equipment, either. We're still getting good service from some non-HP computers and peripherals. There's no reason why you shouldn't.

The keystone of our system is the HP 3000, a powerful general business system. An inexpensive software package lets it communicate with the HP 1000, a computer generally dedicated to design, test and control applications in the factory. (Both can also link directly with an IBM mainframe.)

Most long-distance communications are handled by the HP 2026, which also has plenty of power for local data processing. New HP 3000 software makes it an even more powerful management information tool. You can, for instance, sit down at your computer in Paris and use all the processing power and data base of your Milan computer—or any other HP 3000 in your network.

Protecting the biggest investment of all.

We spent hundreds of man years developing the operating software for the HP 3000. So we know all about programming costs, and want to keep them down as much as you do. We do it by designing our new systems to use existing software. They'll run your programs faster and more efficiently. Otherwise, you'll hardly notice the difference.

We also save you a lot of headaches by making our own printers, video terminals, discs and tape drives and other add-on memories, data entry devices and the like. If any part of the system does need servicing we can fix it. With so many HP offices around we can usually be at your door within hours of your call.

The moral of our story.

It's simply this. If you need to distribute your computer workload across oceans or in your plant, you don't have to gamble. The Hewlett-Packard system has a bright future as well as an impressive past. You can find out all about it by filling in the coupon or writing to the address below.

HP3000

To: Hewlett-Packard Ltd., Wincoburn, Wokingham, Berks RG11 5AR.
☐ Please send me further information on the HP 3000 System.
☐ I want a sales representative to contact me.

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 Company _____
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Wincoburn, Wokingham, Berks RG11 5AR. Tel: Wokingham 784774.

WORLD TRADE NEWS

U.S. business with Soviet Union shows 27% drop

BY DAVID SATTER

MOSCOW, March 30.

THE VALUE of U.S.-Soviet trade dropped significantly in 1977 compared with 1976, but increased Soviet demand for U.S. agricultural products is expected to push it back up in 1978.

Figures released by the U.S. Embassy show that U.S.-Soviet trade last year had a value of U.S.\$1,587m, 27 per cent less than the value of trade in 1976, which reached a record U.S.\$2,127m.

U.S. exports to the Soviet Union declined 30 per cent to U.S.\$1,623m, in 1977 from U.S.\$2,306m. In 1976 but U.S. imports from the Soviet Union increased six per cent to U.S.\$334m, in 1977 from U.S.\$221m, in 1976.

Most of the decline in U.S.

Soviet trade in 1977 was due to slackened Soviet demand for U.S. agricultural products in 1976 after a good Soviet harvest. The value of U.S. agricultural exports declined by approximately U.S.\$500m, in 1977 compared to 1976, accounting for almost three quarters of the overall decline in exports.

U.S. commercial sources, however, believe that 1978 will be a very good year for agricultural exports as the Soviets seek to make up for the 17m. tonnes shortfall in the 1977 grain harvest by buying grain abroad.

The Soviets purchased approximately 12m. tonnes of American grain in 1975-1976 and only 6m. tonnes in 1976-77 but may purchase up to 18m. tonnes in 1977-78, according to a U.S. Agriculture Department estimate. The Soviets have already ordered 12.5m. tonnes, of which 6m. tonnes have been shipped.

U.S. non-agricultural exports also declined in 1977 from the levels reached in 1976 but in that area, too, there is some optimism about 1978. The value of non-agricultural U.S. exports to the Soviet Union was approximately U.S.\$630m, in 1977 compared to U.S.\$819m, in 1976 but Soviet orders for oil and gas equipment have reached between \$U.S.60m. and \$U.S.70m. in the past three months alone.

The Soviets are apparently committed to modernising their gas and oil extraction methods, which may predispose them towards the U.S. market.

Coca-Cola may build in Mid-East

COCA-COLA, as part of its effort to be removed from the Arab boycott list, is planning two construction projects in Egypt and Saudi Arabia, AP-DJ reports from Atlanta.

The soft-drink concern may undertake a joint venture with Saudi Arabia to build a canning plant costing \$10m. to \$15m. It will eventually supply the plant with soft-drink concentrate.

The company also plans to build a \$4m. soft-drink concentrate plant in Alexandria, Egypt. Both projects are subject to the company's removal from the boycott list.

Sam Ayoub, President of Coca-Cola Middle East, a new group formed to develop the company's business in Arab countries, said he expects Arab countries to vote on Coke's bid to get off the list "by the end of April or the beginning of May." He said Saudi Arabia and Egypt had agreed to support the company.

Woodwork exports up

NEW YORK, March 30.

The British woodworking industry increased exports last year from £28,659,000 in 1976 to £35,990,000, figures from the British Woodworking Federation show. The increase, more than 50 per cent, has been achieved against a background of a declining home market, with fewer houses being built.

Engines for Uganda

The Uganda Government has signed an agreement with a French bank, the Société Générale, and a French engineering company to supply six locomotives to Uganda Railways, AP-DJ reports from Nairobi. The accord is valued at \$6m, and the locomotives, to be delivered by next year, will be for main-line use with cargo and passenger trains.

£1m. shipyard order

HUGH Smith, of Glasgow, has won a £1m. order for heavy shipyard machine tools from Herbert Morris, the Loughborough-based crane manufacturer, as part of a \$25m. package negotiated with Korea Shipbuilding and Engineering. The order includes a 1,500-tonne roll press; a 1,500-tonne hanging press; a 700-tonne frame bender and two 250-tonne pin-type horizontal presses.

Saudi hospital deal

Turner International Industries, a subsidiary of Turner Construction, has been awarded a construction management contract to expand the power plant for the King Faisal Medical City, a medical complex being built in Saudi Arabia, AP-DJ reports from New York.

AUSTRIA'S EXPORTS

Kreisky fights for eastern market

BY PAUL LENDVAI IN VIENNA

DR. BRUNO KREISKY, the Austrian Chancellor, arrived yesterday in East Germany, his second important mission within two months in an attempt to give a much-needed push to Austria's trade with East Europe.

Last month the Chancellor visited Moscow. Although he conducted political talks with President Leonid Brezhnev, the visit, like his East Berlin trip, was primarily motivated by economic considerations.

Meanwhile there was a flurry of high-level visits from Eastern Europe to Vienna. This month alone the Hungarian Minister of Trade, the Czechoslovak Finance Minister and, just before Easter, the Polish Foreign Minister visited the Austrian capital with economic cooperation dominating the talks.

Dr. Kreisky and his ministers are concerned about the stagnation in Austria's once flourishing trade with the East. Last year Austrian sales to the Comecon countries were up only by 1.1 per cent, well below the 6.4 per cent, recorded in aggregate exports.

More important, the surplus in Austria's favour has been shrinking rapidly, from Sch.5.7bn. (about \$86m.) in 1975 to Sch.3.4bn. in 1976 and Sch.2.7bn. last year. A study compiled by trade experts of the Austrian Institute for Economic Research

estimates that if nothing happens, Austria's eastern trade by 1980 might be Sch.3bn. in the red.

The current rounds of talks with the East bloc Governments and State-run companies must be seen against that background.

For Austria, a pacemaker in industrial-technical cooperation with the East while main Western powers were dragging their feet, eastern trade, relatively, is still more important than for any West European country except Finland.

Despite the contraction of proportional stakes since the second half of 1975, the Comecon countries were last year a market for 14.5 per cent of the exports total and provided 5.3 per cent of imports.

In 1975 the proportional shares were 17.1 per cent, and 10.2 per cent, respectively. If one adds Yugoslavia, East Europe's share is just below 20 per cent of the aggregate exports.

Although the market situation varies from country to country, Austrian exporters are faced everywhere with import restrictions and intensified competition by Western exporters. It is also becoming more difficult to keep up with the credit terms offered by West German, U.S. and Japanese competitors. East European insistence on compensation deals is a further big obstacle.

Poland, Hungary, the Soviet Union and Czechoslovakia are the most important markets. The point is, however, that last year Austria had an excessively large deficit of Sch.3.8bn. in trade with the Soviet Union.

The study quoted earlier reckons that in two years the shortfall may rise to at least Sch.5.4bn. A large delegation of leading industrialists, headed by Mr. Rudolf Sallinger, President of the Federal Chamber of Economy, will visit Moscow next month to finalise the deals initiated or discussed during Dr. Kreisky's recent visit.

During his trip to East Berlin, Dr. Kreisky and his ministers will discuss joint projects in third markets.

Specifically, the two countries will be involved in joint ventures in Greece, Egypt, and Iran, primarily in power station construction. Although Austro-Polish co-operation involves the motor industry, the main emphasis has so far been on energy.

Poland is exporting 100-150 MW of electricity to Austria. From 1963 it will be increased to at least 400 MW.

Although the Austrian Minister of Trade, Dr. Josef Staribacher, publicly speculated that a second Austro-Polish power contract might postpone by another ten years the erection of a second

and third nuclear power plant, other observers are less elated about the prospect of growing dependence on fuel and power imports from the Communist bloc.

Meanwhile, Austrian exports to Poland last year dropped by 12 per cent, and their further expansion is clearly linked to further credits.

With serious strains on Austria's balance of payments, the scope for extending important new credits to the Comecon countries has become more limited. Yet earlier this month Austria opened a \$300m. credit line to finance building hotels and infrastructure for tourism in Hungary.

But then Poland is something of a special case, accounting so far for the bulk of the outstanding total of net indebtedness to Austrian banks which, according to latest figures, exceeded Sch.25bn.

Although economic experts estimate that Austria's share of the East European markets (excluding the Soviet Union) during the first three quarters of 1977 rose from 7.5 per cent to 8.1 per cent, they take a pessimistic view of the short-term prospects because most Comecon countries will have to increase grain purchases in the West this year, to the detriment of their engineering imports.

Carter curbs CB radio imports

BY JOHN WYLES

NEW YORK, March 30.

PRESIDENT CARTER has decided to increase substantially tariff protection for U.S. manufacturers of citizens' band radios following Japanese sales penetration which has captured a little over 90 per cent of the American market.

A Presidential order will be issued in the next two weeks which will raise immediately the existing 6 per cent tariff on imported CB radios to 31 per cent. After one year the import duty will be reduced to 18 per cent, and will fall to 15 per cent in the third year. After three years the tariff will revert to 6 per cent.

The new tariffs were given a mixed reception by U.S. producers many of whom had hoped

for more substantial protection over a longer period. However, the White House apparently took the view that the higher duties selected, coupled with the appreciation of the yen against the dollar, would improve the U.S. manufacturers' competitive position and enable them to reduce their inflated stocks.

According to trade negotiator Mr. Robert Strauss, the Japanese had seized about 91 per cent of the American market. Official figures indicate that imports of CB radios reached a peak of 15.3m. in 1976 which was substantially more than the total number of sets sold that year. A small proportion of the estimated 3.1m. sets sold in the U.S. last year were of American make.

Well over 28m. sets are

thought to be in use, many installed in cars and trucks. The CB craze has made it more difficult for police forces to operate their radar speed traps and in some parts of the country the radios have grossly interfered with television reception.

The International Trade Commission found earlier this year that imports were damaging domestic producers, but the six-man ITC panel was evenly split as to what remedy should be recommended.

One group urged import duties starting at 36 per cent, and then scaled down in subsequent years. The other three men rejected trade restrictions and proposed aid to domestic manufacturers under the Government's trade adjustment assistance programme.

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World Bank aid increase

WASHINGTON, March 30.

THE WORLD BANK'S lending activities to support the creation of small-scale enterprises in developing nations will be increased to about \$300m. a year by mid-1981.

In a special study, the agency said this would be a six-fold increase over the amount currently available for that purpose.

The World Bank's objective is to help developing countries in Asia, Latin America and Africa create more jobs outside of agriculture for their growing labour forces.

In many countries, workers increasingly are moving from the farm to urban areas even though there are not enough jobs for the people who are already there.

The World Bank study said the "conventional pattern" of investment—\$15,000 or more for each new job in modern Western industrial nations. "This is far in excess of the capital resources available to poor countries," AP-DJ

Japan-E. Europe credit in doubt

TOKYO, March 30.

TEN LEADING Japanese trading companies will have to decide whether they can agree to a proposal from four East European countries for a simple extension of private Japanese credit lines due to expire to-morrow.

The Ministry of International Trade and Industry said here.

Some trading houses are opposed to simple extension of the credit lines totalling \$1.26bn. supplied in recent years, of which more than half remains unused because of a delay in business talks for the projects for which they are intended. It said.

The credit lines are \$450m. for Poland, of which 48 per cent had been used as of early March.

\$330m. for Romania, 44 per cent used, \$200m. for Yugoslavia, 37 per cent used, and \$280m. for Renter

Bulgaria, 12.8 per cent. used, it said.

Last-minute efforts to reduce the unused portions of the credit lines by stepping up business talks have not been very successful, the Ministry said.

In addition, Hungary has a credit line, expiring in March 1978 of which only 2.8 per cent had been used as of early March, it said.

Business negotiations for Japanese exports of machinery and equipment for some East European projects have met with difficulties because of East European demands for Japanese counterpurchases of their products and better payment terms specified for the credit lines.

If the credit lines are not extended, new credit lines may be negotiated, but that would involve further difficulties, the Ministry said.

Sheraton for Amman

By Rami G. Khouri

SHERATON CORPORATION, the American hotel company, has signed a 25-year agreement to manage a new 300-room, five-star hotel in Amman. The new Sheraton Palace Hotel is being built by the Sawalha Brothers tourist hotels company, owners of the Grand Palace Hotel, for \$20m.

At 22 stories, with an all-season rooftop swimming pool, the new hotel will be Amman's tallest building.

Sheraton will provide an all-international staff to start operations when the hotel is completed in June next year and will gradually train Jordanian staff to take over.

There is no management fee but Sheraton gets a straight percentage of net profits. More than half the financing is being raised by a loan in Jordanian dinars being syndicated among Jordanian, Arab and international banks operating in Amman. Citibank is putting the loan together.

We saw them all around the world and brought them safely home.

The Whitbread Trophy Round-the-World Yacht Race is a test of endurance. For the crews and their equipment alike. In some of the most hazardous conditions you can meet at sea, you need to know you can trust your equipment, and the service. Which is why 10 of the 15 entrants chose Lucas Marine equipment. And why they relied on Lucas Service for both their pre-pack check and their free service, electrical and fuel injection equipment checks at Cape Town, Auckland and Rio. So when we congratulate the winners, we're congratulating ourselves too. After all, we saw them all around the world. And brought them safely home.

"Lucas equipment on board includes alternators, starter motors, batteries, control boards, cable signalling lamps, meters and diesel fuel injection systems, all the equipment being fully protected for marine applications. Contact us at Frimley Road, Camberley, Surrey, Phone (0276) 63252.

LUCAS

HOME NEWS

BP Chemicals will spend £200m. despite profit fall

BY KEVIN DONE, CHEMICALS CORRESPONDENT

PROFITABILITY of British Petroleum's chemicals operations fell last year, but the group is pressing ahead with a rapidly growing capital expenditure programme this year. Pre-tax profits from its worldwide chemicals operations dropped from £48.5m. in 1976 to £18.9m. last year, but the fall in U.K. activities was even more pronounced.

Profits in the U.K. were down from £36m. in 1976 to £11.3m. last year, and the volume of home and export sales fell by 3 per cent.

Faced with strong competition and only slow growth in the U.K., the group put more emphasis on export sales and pushed up the volume by 4 per cent. over the year.

Sales value was up by 10 per cent. because of higher prices, but this failed to keep pace with the movement in costs, which rose by 16 per cent.

The group's overall sales volume—taking in the activities of associated companies in six other countries—was slightly up by 2.1 per cent. to 2.6m. tonnes with a turnover of £861m.

Important markets for the company were hit last year by the serious depression in the European synthetic fibres industry, and aromatics production has suffered from the impact of U.S. exports based on low cost energy.

However, capital expenditure—chiefly on projects already in progress—will rise sharply this year to about £200m. worldwide, compared with £112m. last year. U.K. capital expenditure will be up from £65m. last year to about £130m. this year.

The bigger schemes are aimed at enhancing existing areas of BP Chemicals business.

In partnership with ICI it is building a £150m. ethylene plant at Wilton on Teesside, which is due for completion at the end of the year—12 months behind schedule.

Park West for sale

By John Brennan, Property Correspondent

PEACHEY Property Corporation has received 150 inquiries, "several of which are serious," from potential buyers of its Park West residential block near Marble Arch, London, says Mr. John Brown, managing director. Park West, held by Peachey on a 120-year leasehold from the Church Commissioners, could earn about £2m. a year in short letting income, says Allison Peachey's selling agents. The block is likely to sell for between £10m.-£12m.

Profit safeguards essential—CBI

BY ELINOR GOODMAN, CONSUMER AFFAIRS CORRESPONDENT

THE GOVERNMENT has been urged to resist pressure from MPs to abolish the profit safeguards written into price controls.

The Confederation of British Industry said that the safeguards were essential to industry and could not be said to have inhibited the Price Commission's effectiveness. It was "nonsense" to describe them as loopholes, as some Labour MPs had done.

Mr. Ronald Utiger, chairman of the confederation's prices committee, said that most commission members had shown themselves to be "reasonable" and had exercised their powers responsibly.

But the legislation gave the commission wide discretionary powers and it was essential that industry should be given guaranteed protection against abuse of these powers.

Pressure has been building up in recent months among some MPs for tightening up of the safeguards.

The safeguards restrict the commission's powers to recommend a freeze in prices if doing so would reduce a company's profits beyond a certain point.

When Allied Breweries was allowed to raise its prices by 3p a pint though it was being investigated by the commission, Labour and Liberal MPs demanded a tightening of the safeguards.

Mr. Roy Hattersley, the Prices Secretary, said that he was keeping the situation under review. He was asking the commission to inform him of any examples where it was being inhibited by operation of the safeguards.

The CBI is worried that Mr.

Hattersley will try to get the changes through the Commons this summer when he lays the orders which will be needed when profit margin controls expire in July.

Mr. Utiger said yesterday that he was "alarmed" by the commission's recent recommendation that the Ever Ready battery company should be forced to curb its proposed price increases to 2 per cent.

The commission had praised the company's efficiency but recommended that its prices should be restricted to a level which would yield a rate of return of only 10 per cent. on a current accounting basis.

The clear implication of this, he said, was that even an efficient company should not be allowed to earn more than 10 per cent.

Traded option could cost £15

BY MARGARET REID

THE SYSTEM of commission charges envisaged for deals in London's traded share options market, which opens on April 21, includes a provision that there should be a minimum charge of £15 unless the value of the transaction is less than £20.

The scale of charges worked out, subject to final approval by

the council of the Stock Exchange under whose control the market will operate, includes a fixed charge of £2.75 for each option contract, plus a further sum based on the value of the contract.

The additional amount is to be 21 per cent. on the option money involved up to £5,000, 11

per cent. on any amounts above £5,000 up to £10,000 and 1 per cent. on the excess beyond £10,000.

Although the minimum charge normally will be £15 for any option contract, a broker, if the total consideration is less than £20, may charge the basic option contract fee of £2.75 only.

BOND DRAWING

CITY OF TURIN U.S.\$ 9% Bonds 1991

S. G. WARBURG & CO. LTD., announce that Bonds for the nominal amount of U.S.\$500,000 have been drawn in the presence of a Notary Public, for the redemption instalment due 1st May, 1978.

The numbers of the Bonds so drawn are as follows:

7	34	61	69	87	104	124	142	182	182
202	220	236	254	272	289	306	326	343	362
380	395	413	431	447	471	490	507	531	547
565	589	605	635	652	671	689	705	732	750
713	751	809	825	850	865	884	902	919	943
961	986	1020	1043	1061	1080	1102	1120	1135	1153
1173	1191	1220	1263	1280	1302	1320	1335	1365	1392
1412	1433	1450	1469	1493	1510	1530	1553	1570	1587
1604	1622	1640	1655	1682	1700	1715	1735	1761	1776
1794	1811	1829	1847	1867	1886	1904	1921	1942	1973
1991	2027	2069	2086	2105	2139	2155	2173	2209	2226
2243	2269	2287	2307	2335	2353	2371	2399	2414	2432
2450	2492	2516	2534	2554	2573	2591	2607	2627	2644
2664	2696	2713	2740	2756	2780	2796	2813	2850	2870
2892	2910	2929	2947	2965	2982	3000	3020	3041	3065
3091	3107	3125	3152	3170	3194	3215	3234	3262	3289
3286	3304	3321	3347	3367	3385	3403	3420	3436	3472
3489	3515	3536	3553	3561	3585	3590	3600	3722	3800
3816	3833	3854	3871	3889	3906	3923	3941	3959	3974
3992	4010	4026	4044	4073	4100	4127	4182	4221	4240
4292	4339	4354	4372	4390	4407	4425	4443	4460	4481
4502	4530	4547	4564	4590	4611	4631	4649	4669	4686
4722	4763	4811	4829	4873	4893	4914	4931	4949	4965
4983	5019	5034	5052	5074	5091	5124	5174	5198	5216
5233	5253	5271	5287	5305	5323	5341	5359	5374	5392
5410	5426	5444	5462	5480	5496	5514	5531	5549	5565
5583	5605	5622	5640	5661	5676	5694	5711	5729	5746
5763	5781	5802	5819	5835	5852	5869	5893	5913	5930
5948	5962	6000	6016	6033	6051	6067	6085	6103	6120
6135	6163	6180	6196	6212	6228	6244	6260	6276	6294
6411	6429	6445	6476	6493	6510	6527	6544	6560	6576
6631	6667	6711	6742	6786	6803	6822	6842	6864	6892
6969	7006	7024	7055	7109	7125	7142	7159	7174	7191
7207	7224	7241	7258	7273	7290	7306	7323	7340	7356
7372	7389	7405	7422	7439	7454	7471	7487	7504	7521
7536	7553	7570	7586	7603	7620	7635	7652	7669	7685
7702	7719	7734	7751	7767	7784	7801	7816	7833	7850
7866	7883	7900	7915	7932	7949	7965	7982	7999	8014
8031	8047	8064	8081	8096	8113	8130	8146	8163	8180
8196	8212	8229	8245	8262	8279	8294	8311	8327	8344
8361	8376	8393	8410	8426	8443	8460	8476	8492	8509
8525	8542	8559	8574	8591	8607	8624	8641	8656	8673
8690	8706	8723	8740	8755	8772	8789	8805	8822	8839
8854	8871	8887	8904	8921	8936	8953	8970	8986	9003
9020	9035	9052	9069	9085	9102	9119	9134	9151	9167
9184	9201	9216	9233	9250	9266	9283	9300	9316	9332
9349	9365	9382	9399	9414	9431	9447	9464	9481	9496
9513	9530	9546	9563	9580	9595	9612	9629	9645	9662
9679	9694	9711	9727	9744	9761	9776	9793	9810	9826
9843	9860	9875	9892	9909	9925	9942	9959	9974	9991

On 1st May, 1978, there will become due and payable upon each Bond drawn for redemption, the principal amount thereof, together with accrued interest to said date at the office of:-

S. G. WARBURG & CO. LTD.,
30, Gresham Street, London, EC2P 2EB.,

or with one of the other paying agents named on the Bonds.

Interest will cease to accrue on the Bonds called for redemption on and after 1st May, 1978 and Bonds so presented for payment must have attached all coupons maturing after that date.

U.S.\$500,000 nominal Bonds will remain outstanding after 1st May, 1978.

The following Bonds drawn for redemption on dates stated below have not yet been presented for payment.

1st May, 1972
Nos: 2768 : 6968
1st May, 1973
Nos: 317 : 2777 : 3717 : 4197 : 8837
1st May, 1974
Nos: 318 : 2778
1st May, 1977
Nos: 316 : 346 : 1902 : 2619 : 4236

30 Gresham Street, London, EC2P 2EB.

31st March, 1978

Boost tree planting, report urges

BY MAX WILKINSON

FURTHER EFFORTS to increase the supply of home-grown timber and waste paper for recycling are proposed in a report published today by the National Economic Development Council Sector Working Party on Paper and Board.

The report says that 15 per cent. of the industry's wood pulp requirements are home grown, compared with a long term target of 25 per cent.

However, the present rate of planting is not thought to be sufficient to attain the target before the year 2000. The working party is concerned about the effects of fiscal legislation which has led to a drop in the planting rate in the private sector.

The working party wants closer co-operation between timber growers and users and it

wants Government policies aimed to encourage private planting.

It says the aim should be the establishment of 2.5m. hectares of productive woods and forests by the year 2000.

Efforts should also be made to improve the collection of waste paper, mainly from households, to match the expected 500,000 tonnes increase of consumption (25 per cent.) between 1976 and the early 1980s.

"It is estimated that by 1980, assuming the continuance of present trends, there could be a shortfall of certain grades, particularly of mixed wastes unless increases in recovery rates currently being planned are achieved.

"Since most pre-consumer waste is already collected, this

means increasing the collection of post-consumer waste by voluntary groups, merchants and local authorities."

Total purchases from local authorities dropped 40 per cent. between the first half of 1970 and the second half of 1976.

"The reasons for this decline include the cyclical nature of demand, the absence of any stabilising influence other than the mills' limited ability to hold stocks, restructuring of English local authorities in 1974, and current financial constraints on local authorities."

The paper industry regards local authorities as an important source of mixed waste and would like to see more joint schemes between authorities and private merchants, including mills.

Schemes for improving waste

paper collection should qualify for Government aid, says the report, and the industry should press forward with a plan for an excess stock scheme to even out the cycles of demand.

In a general review of the industry, the working party says that U.K. consumption of paper and board rose at an annual rate of 2.7 per cent. between 1963 and 1974 from 5.6m. tonnes to 8m. tonnes, but dropped to 6m. tonnes in 1975, rising again to 7m. tonnes last year.

In the decade up to 1974, U.K. production rose by 0.6 per cent. a year, less than a quarter of the rate of increase in consumption. By 1974 output was 4.6m. tonnes, which dropped to 3.6m. tonnes in 1975 and rose again to 4.1m. tonnes last year.

The proportion of U.K. con-

sumption which was imported rose from 29 per cent. in 1963 to 44 per cent. in 1975.

The increase in import penetration, has, however, been dominated by the reduction of U.K. capacity in newsprint in the face of competition from large integrated mills in Scandinavia and Canada.

Production of tissues has increased by 27 per cent. in the last decade and in this sector, U.K. manufacturers are estimated to have over 90 per cent. of the home market.

Productions in other parts of the industry has shown a decline since 1970 ranging from 16 per cent. in printings and writings, 17.5 per cent. in board to 0.4 per cent. in corrugated case materials.

Come in 'Flyer'. You've earned your Trophy.

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HOME NEWS

Roadline makes £2m. turn-round to show profit

BY CHRISTOPHER DUNN

ROADLINE U.K., the National Freight Corporation's parcel delivery arm, made a £2m. recovery into profit last year, Mr. Arthur Smith, managing director said in London yesterday.

Trading profits this year should expand by nearly 80 per cent., he forecast, after detailing investment plans worth over £13m. for the next two years. Most of the money will be spent with British Leyland.

Recovery had been based on a successful drive into the commercial parcel delivery business and away from the more costly person-to-person end of the market. A management shake-up, plus phased redundancies had also helped.

Trading profits for the year ended December 31 were £300,000 compared with losses the previous year of £1.1m. All parts of the company, which has 75 branches throughout the country, showed an improvement, apart from Scotland, where there were losses.

The upturn at pre-dividend level was also £2m., following higher pension charges of £300,000; redundancy costs; and £300,000 of interest charges.

Sales at Roadline, formerly British Road Services, rose just over 7 per cent. to £44.6m.

The company should make £1.6m. at trading level, Mr. Smith forecast for this year, as Roadline expanded its High Street delivery business to big retailers such as British Home Stores. The mail-order delivery side should also expand, along with cigarettes, wines and spirits freightage.

The value of goods carried increased last year by more than 17 per cent., although volume sales had fallen. This was part of a deliberate policy to diversify out of low-value single-consignment business.

The labour force was cut by 6 per cent. to about 8,000 last year, while head office charges fell by 10 per cent.

New vehicles and better handling equipment accounted for the bulk of the £13m. capital expenditure programme, £9m. of which will be placed with British Leyland.

Selective retirement backed

BY ERIC SHORT

THE DEPARTMENT of Employment favours selective early retirement schemes such as the job release schemes as a better method of reducing unemployment rather than a general switch to the retiring age for men. The latest Department of Employment Gazette, says that a general reduction in retirement age would have the greatest impact on unemployment over the

medium term, but would not be cost-effective relative to selective schemes.

The Department forecasts that there could be an immediate reduction of 200,000 in the number of unemployed and when industry had fully adjusted to the change, then unemployment could be 600,000 lower. But the net cost would amount to more than £1bn. a year.

Sea gas may provide offshore electricity

BY RAY DAFTER, ENERGY CORRESPONDENT

NORTH SEA natural gas may be collected in the future through new pipelines and floating liquefaction plants according to Mr. reports to be considered by Energy Department officials.

It is also possible that some of the gas will be converted offshore into methanol—a basic petrochemical—or used to generate electricity which could be transmitted to shore by undersea cables.

Studies into these schemes are being completed and it is likely that within the next 12 months the Government will sanction at least the start of a new collection system.

This could involve the construction of spur pipelines linked to the main Brent or Frigg gas trunk lines. Initial estimates suggest that these new links, tapping gas from reservoirs in the central and northern parts of the North Sea, could cost about £250m.

Gas Gathering Pipelines (North Sea), a consultative company set up by the Government with private and State-owned new pipelines and floating liquefaction plants according to Mr. reports to be considered by Energy Department officials.

It is thought that while the company has accepted the need for the construction of comparatively short sections of pipelines, it still has not been convinced that a big new gas gathering system—possibly costing £500m—would be justified economically.

Within the offshore industry it is felt that oil companies would have to find at least one big gas field to justify the construction of a trunk line which could form the backbone of a £500m. collection system.

Although the discovery of such a field is possible, it is thought that for the time being the Government will defer a decision on a big pipeline network and look instead at some of the other gas collection systems.

David Brown-Vosper (Offshore) has been commissioned by the

Energy Department's offshore supplies office to study the possibility of using floating liquefaction plants.

This report is to be submitted within the next day or two. However, it appears that Brown-Vosper believes that the use of these offshore plants would be technically and economically viable and a safe solution to the handling of pockets of gas.

The idea likely to be put to the offshore supplies office is that a series of units should be constructed. They could then be moved from one block to another as gas reserves are exhausted.

The plants might be incorporated in semi-submersible vessels, equipped with large concrete storage tanks.

A small unit, capable of handling 10m. cubic feet of gas a day might cost about £50m, while a plant capable of handling 400m. cubic feet a day could cost about £400m.

Engineering shows marginal growth

BY JAMES McDONALD

OUTPUT by the engineering industry in 1977 was only marginally higher than in 1976, with a slight decrease in production by each of the three main sectors in the fourth quarter.

The index for all engineering industries last year, at 103.9 (1970=100), compared with 103.6 for 1976.

For 1977 as a whole output of the mechanical engineering industries was 2 per cent. lower than in the previous year. In the relatively small instrument engineering sector, however, output rose by 2.5 per cent., and in the electrical engineering industries it went up 3 per cent.

Within mechanical engineering, the main exceptions to the gradual decline in output were pumps, valves, compressors and fluid power equipment. Industrial engines, office machinery, and the combined group of weighing machinery and portable power tools.

All these industries showed some further increase in the fourth quarter of last year, together with production of agricultural, textile, mining and other non-electrical machinery, which made some recovery from previously falling or subdued trends.

The electrical engineering, experience in 1977 was mixed, according to figures by the Department of Industry in its Journal Trade and Industry. The growth of 3 per cent. over 1976 was entirely in the high-technology electronics industries.

Electronic components, computers and electronic capital goods showed marked increases in output, of 11, 15 and 10 per cent. respectively. The precise rates of growth are difficult to measure accurately because of constantly developing technology.

Electrical machinery, the wires and cables industry, and electric parts for vehicles showed similar smaller increases. Output of the telecommunications equipment industry declined appreciably, by 18 per cent.

Output of many sections of electrical engineering slackened towards the end of the year. An increase as between the third and fourth quarters appeared only for electronic components, records and tapes, and electronic capital goods.

Figures for the computer industry changed markedly during the final two months, and the fourth-quarter index, at 108.8, was 30.6 points below the exceptionally high third-quarter figure of 218.4. However, the fourth-quarter figure was still 13 per cent. higher than the average for 1976.

Zaire living costs highest

FINANCIAL TIMES REPORTER

THE MOST expensive country in the world for a British expatriate is Zaire, it was claimed yesterday.

Employment Conditions Abroad, which collects data on jobs and living conditions abroad for B.P. ICI, Shell and other companies, estimates that it is 4.25 times more expensive for a British expatriate to live in Zaire than in the U.K.

Other comparisons with U.K. living costs at present exchange rates put Ghana near the top of the league with living costs 3.7 times the U.K. level and Japan at 2.3 times.

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Mrs. Thatcher hits at State control

BY JOHN HUNT, PARLIAMENTARY CORRESPONDENT

STATE CONTROL and high concern of politicians, but it was levels of public expenditure cannot be reduced without a corresponding reduction in public expenditure.

Mrs. Margaret Thatcher, leader of the Opposition, in an address to the House of Commons, said that the Government must be tempted to identify virtue with collectivism.

She said that the State services would have done as much for the man who fell among thieves as the Good Samaritan did for him.

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British Airways to use Gatwick for Zurich run

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

BRITISH AIRWAYS plans next Monday to start its first international scheduled services from Gatwick Airport with flights to Zurich using One-Eleven jets.

While the airline has operated for many years with its British Airways holiday charter subsidiary from Gatwick, it has hitherto resisted a move to that airport with scheduled international services, preferring to concentrate on Heathrow.

But increasing congestion at Heathrow and growing competition from other airlines using Gatwick, has obliged it to make the move. British Airways intends to keep the bulk of its operations at Heathrow, but will probably increase its Gatwick

operations as passenger demand builds up.

With a £100m. modernisation scheme, now completed at Gatwick, designed to boost the airport's capacity from the present 6m. to 16m. passengers a year, it is comparatively uncongested and is regarded by many travellers as a more pleasant place at which to begin and end a journey.

The Department of Trade is actively campaigning to encourage more foreign airlines to use Gatwick, and both the new service to the U.S. by Braniff International and Delta Air Lines, are being based on Gatwick instead of Heathrow.

Climax in landing systems battle

THE BATTLE between the U.K. and the U.S. to provide a new landing system for aircraft for the next 20 years or more comes to a head at a meeting starting in Montreal next Tuesday.

The All-Weather Operations Division of the International Civil Aviation Organisation—the aviation technical agency of the U.N.—will be considering the rival systems over a period of more than two weeks, until April 21, and by that time is expected to decide between them.

At stake will be orders worth more than £1bn. world-wide over the next 20 years for the winning system. Under the Organisation's rules, no single manufacturer will have a monopoly of the winning system, either U.K. or U.S., and all the manufacturers involved will have the right to make and sell whichever system is chosen.

Nonetheless, the makers of the winning system will have a head-start over their rivals in world markets.

The overall requirement is for what is called a Microwave Landing System (MLS), a method of bringing greater numbers of aircraft in to land in all-weather conditions than is at present possible with existing Instrument Landing Systems.

To meet the Organisation's requirements, the British have developed what is called Doppler MLS, while the U.S. has developed what it calls Time-Reference Scanning Beam (TRSB) MLS.

The rival systems have been and still are being tested at various major airports, but enough data has been produced on their respective merits to enable the organisation to go ahead with its meeting.

The U.K. system is developed by Plessey, with the aid of the Civil Aviation Authority, and it has been given the full support of the Government. The U.K. believes that Doppler is the safest of the two systems.

The U.S. system is developed by a number of companies, including Bendix, Texas Instruments and Hazeltine Corporation.

The 19-page consultative document sets out which of the 1968 provisions still apply. The Government hopes its proposals will enable drivers to make use of the greater flexibility of the EEC rules compared with the 1968 Act.

One of the main changes proposed concerns the maximum permissible period of continuous driving. EEC rules call for a minimum break of 30 minutes after five hours to be reduced in due course to four hours, and provide for shorter breaks instead at more frequent intervals.

Electricity demand less than expected

BY ROY HODSON

GROWTH in electricity demand is falling short of targets because of sluggish industrial production and almost static domestic demand.

The Central Electricity Generating Board for England and Wales expects only a 2 per cent. increase in electricity usage during the financial year 1977-78. A rise of at least 3 per cent. had been predicted.

But the Board hopes to break even in spite of the lower sales. Last year it made a profit of £129.8m. after paying interest charges—an increase of £71m. on the previous year.

If demand fails to improve, the Board may have to seek higher wholesale prices from area boards to avoid running into deficit.

It cannot give any hope in the short term of containing electricity prices by more efficient production.

The next major power station to come into production—the 3,200 MW Isle of Grain station—is oil fired.

At present, oil for power stations is 10 per cent. dearer than equivalent coal supplies. The next cost breakthrough for electricity generation will be in the early 1980s when advanced gas-cooled reactors are brought into production.

The South of Scotland Electricity Board yesterday announced price increases of 10 per cent. on domestic bills and 9.4 per cent. for industrial supplies.

The Board will boost revenue by £220m. and expects to break even during 1978-79.

The Prices Commission is still investigating the increased charges and will report on June 12.

Repairs to the Hunterston B nuclear power station, where a sea-water leakage put one of the two generators out of action, have cost the SSEB £5m, the chairman, Mr. Roy Berridge, said yesterday. Dearer fossil fuels to maintain output while repairs are carried out will cost up to £10m. in the coming year.

Overall productivity at National Coal Board mines, as measured by output per man shift, rose to 46 cwt. in February, 1.9 per cent. higher than in the corresponding month last year.

Total gas sent out in December-February was 5.5 per cent. higher than in 1976-77 with the greater part of the increase in February. Electricity supplied from November-January was 3.8 per cent. lower than a year previously.

Trends report says that seasonal adjustments after correction for temperature effects and total energy consumption was running at about 0.5 per cent. higher than the previous year.

Total coal production from December-February was 1.5 per cent. higher than the corresponding period of 1967-77. The increase of nearly 500,000 tons in open-cast production more than compensated for the 200,000 tons decline in output from deep mines.

The Government's Energy

Society's loss may exceed £600,000

By David Churchill

LOSSES incurred by the Grays Building Society could be greater than those uncovered in the last building society crisis two years ago.

The exact extent of the financial irregularities uncovered in Grays' accounts after the death of Mr. Harold Haggard, the society's chairman, are due to be disclosed to-day by the Building Societies Association.

The irregularities could be greater than the £500,000 discovered by the Wakefield Building Society in 1976. Grays' assets of £11m. are under half those that were held by the Wakefield at the time its losses were uncovered.

Details of the Grays' losses have been passed to the Building Societies Association by a team of executives from the Woolwich Equitable, who have been investigating the society's activities.

The size of the losses at Grays came as a surprise to the building societies movement.

The five biggest societies are believed ready to provide financial support to Grays pending a long-term decision on its future.

This rescue operation means that no depositor will lose any savings.

International drops stamps in 40 stores

BY OUR CONSUMER AFFAIRS CORRESPONDENT

GREEN SHIELD trading stamps are to be dropped by International Stores, the BAT Industries supermarket chain, in another 40 of its 720 stores.

The shops, all in the South of England, are to be converted to the new kind of cut-price Pricerite formula which International has been using in some of its smaller stores in the North for three years.

Instead of giving stamps in these stores, BAT is concentrating on offering the lowest possible prices—the company claims they are 5 per cent. lower than in a traditional supermarket—on a limited range of merchandise.

To make money on trading at these very reduced margins, the stores need to show a big increase in volume, and BAT said yesterday that it was hoping that the conversions would lead to at least 35 per cent. increase in sales.

International took over the Pricerite group in 1973, but the shops now trading under the Pricerite name bear little resemblance to the old stores.

The new stores, similar to those run by Fine Fare under the Shoppers Paradise name, stock only a narrow range of goods—500 to 600 lines—and operate on very low gross margins. Costs are reduced to a minimum.

The company now has about 750 stores.

40 of these Pricerite stores trading in the North of England, none of them giving trading stamps. It has now decided to expand the operation into the South of England, where discount trading is less developed.

In all, 50 new Pricerites are to be opened.

VW, Audi extend warranty

Financial Times Reporter

VOLKSWAGEN AND AUDI are to introduce insurance to extend the warranty on major components after the initial 12 months.

For payment of £39 for one year, or £85 for two, all cars sold by VW and Audi dealers will be covered.

Used cars will need to have run less than 50,000 miles. The scheme will also apply to other makes sold by VW and Audi dealers. It is being run by Auto Union Finance, jointly owned by Volkswagen GB and Lloyds and Scottish.

Cover for VW commercials will cost £49 for one year and £75 for two.

Thanks to your get up and go, we offer more places in Europe to get up and go to.

We fly to more international destinations in Europe from our home base than any other European airline flies from theirs.

And with good reason.

Over the years, the initiative of the British businessman has taken him to markets

that many of his European competitors have been slow to exploit.

So as British trade has grown so has our route map.

Today, flying to more than just the obvious places gives you a distinct edge.

Because while your competitors are sitting around waiting for connections, you can already be getting down to business, having flown directly to your destination.

When you travel to Europe, fly the flag and feel at home.

British Airways 58 European destinations from Heathrow.

Air France 48 European destinations from Paris.

KLM 46 European destinations from Amsterdam.

SAS 45 European destinations from Copenhagen.

Swissair 39 European destinations from Zurich.

Lufthansa 38 European destinations from Frankfurt.

Sabena 31 European destinations from Brussels.

Alitalia 27 European destinations from Rome.

Iberia 23 European destinations from Madrid.

British airways

We'll take more care of you



GLASS & METAL HOLDINGS LTD.

Profits reach New Record level

An extract from Mr. A. Bowman's Review

The Group broke through the one-million pound profits barrier for the first time in its history and achieved profits before taxation of £1,052,009, an increase of 29% despite a minimal contribution from the engineering division as a result of the downturn in the Construction Industry.

Financial Results

Year to 31st October	1977	1976
Turnover	£5,930,107	£5,137,417
Profit before Tax	£1,052,009	£814,205
Dividend	30.25p	27.50p
Earnings per Share	14.2p	13.2p
Balance Sheet Value per Share	100p	79p

COMPANY ANNOUNCEMENT

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA LIMITED

(Incorporated in the Republic of South Africa)

PRIVATE PLACING OF PREFERENCE SHARES

Agreement has been reached for the Corporation to make a private placing on or about the 1st July 1978 with certain local institutions of R40 million 104 per cent redeemable cumulative preference shares, which will carry no conversion rights. The issue will have an average life of approximately eight years.

The proceeds of the issue will be used to finance ongoing commitments of the Corporation.

A general meeting of members of the Corporation will be called to consider the necessary resolutions for the issue of the preference shares by the directors and a circular giving the notice of the meeting and full details will be sent to members in due course.

London Office:
40 Holborn Viaduct
EC1P 1AJ

Johannesburg
March 31st 1978

LABOUR NEWS

ASLEF told to seek internal settlement

BY NICK GARNETT, LABOUR STAFF

ASLEF, the train drivers' union, which threatened a series of one-day strikes in a pay dispute, has been told by an independent inquiry panel to sort out its grievances within British Rail's existing negotiating procedures.

The panel, under Lord McCarthy, chairman of the Railway Staff National Tribunal, the highest tier in the railway negotiating structure, but sitting as an independent advisor, said ASLEF's grievances should be given priority.

If agreement cannot be reached at the Railway Staff Joint Council, the lowest of the three negotiating tiers for major issues, it should be handled by the Railway Staff National Council and, if necessary, by the Railway Staff National Tribunal.

ASLEF, which is seeking similar "commission" payments for all footplatemen to those negotiated for 1,600 National Union of Railwaymen pay-train guards, had the option of taking the issue

through the industry's negotiating structure, as the panel now suggests, long before discussions broke down and the strikes were threatened at the end of February.

By bringing the issue to a head, however, ASLEF managed to bring into public view what it believed to be a "sectional" pay deal that ran counter to the industry's 1974 pay restructuring exercise.

It also provided ASLEF with an extra bargaining lever in this year's pay and productivity talks, which involve staff shuffling throughout the industry.

The panel — the setting-up of which led to ASLEF rescinding its strike notice — says the claim should be heard by the joint council, not more than ten days after it has been tabled by ASLEF.

The panel's report, welcomed yesterday by the British Railways Board, says British Rail should

Water workers vote 2-1 for 10% rise

BY OUR LABOUR STAFF

MEMBERS of the General and Municipal Workers Union in the water industry have accepted a pay offer within Government guidelines.

The 20,000 workers, the largest group in the industry's 33,000 workforce, voted 2-1 by postal ballot in favour of the management's offer.

All manual workers in the industry have now accepted the deal following acceptance by members of the Transport and General Workers Union and the National Union of Public Employees.

The deal, back-dated to December, will give increases of 5 to 17 a week on current average earnings of £55 to £71.

Shift allowances and sick pay have also been improved, and the wage structure will now be reviewed. The three unions, which had been seeking a firm-type forward commitment, are also hoping to extend and improve existing bonus payments.

The rail unions, and manual workers in the electricity industry, are the only groups in the public sector with real industrial strength who have still to settle during this wage round.

There have already been indications that power workers will eventually accept their pay offer of 10 per cent, together with a productivity deal worth 5 to 8 per cent.

Townsend Thoresen dispute settled

BY OUR LABOUR STAFF

THE UNOFFICIAL seamen's strike that disrupted Townsend Thoresen ferry services to Holland and Ulster over Easter has been called off and sailings resumed early yesterday.

The men, mainly based at Felixstowe, Suffolk, were protesting at the sacking of an assistant steward after he was convicted of a drugs offence.

After a meeting in London on Wednesday between management, National Union of Seamen officials and the striking seamen's port committee, the men agreed to drop their claim for reinstatement of the steward and resume work.

They also agreed that other issues involved in the dispute—such as payments and manning levels—could be discussed after a return to normal working.

Townsend Thoresen agreed that there would be no loss of jobs for seamen involved in the dispute.

The 13-day-old strike disrupted holiday sailings from Felixstowe to Rotterdam and Zeebrugge as

well as Townsend Thoresen's service between Cairn Ryan in Scotland and Larne in Northern Ireland.

The strikers were given seven days' notice for starting their industrial action and their union urged them to go back to work.

Port slacker

TOURIST TRAFFIC through the port of Dover last month was down on the corresponding period last year—passengers by 2.61 per cent, and cars by 6.24 per cent. Last year was exceptional because of industrial problems at Rotterdam.

Pitmen killed

TWO MINERWORKERS were crushed to death at the Lady Windsor Colliery at Ynysbwl, South Wales, yesterday. Surface lifters, they were working beneath a tram lift.

Number of strikes fell last month

BY PHILIP BASSETT, LABOUR STAFF

THE NUMBER of strikes fell last month, with 12,800 workers directly involved in beginning, involving about 42,500 workers. A total of 537,000 work-stoppages about wage rates, earnings days were lost, the lowest monthly total since July last year.

A further 39,100 workers were involved in 64 stoppages which were continued from January, leading to the loss of 342,000 of the total number of lost working days, according to figures in the Department of Employment Gazette.

The number of working days lost through strikes in the first two months of the year was 175,000 up on the same period last year.

The number of strikes was down by 48 on January's total of 185, and the number of workers involved in stoppages was down by 34,000. Last year's strike figure showed an upward trend, a 300 strike increase in Coventry, and a "dirty jobs" strike at Ebbw Vale steelworks, which

caused 3,000 workers to be laid off.

● An estimated total of 1,747,600 employees in manufacturing industries, 33.6 per cent of the total number, worked overtime in the week ended January 14, 1978. An average of 8.4 hours overtime was worked per employee, giving a seasonally adjusted total of 14,034 hours.

In the same week, the estimated number on short time in these industries was 46,900, or about 0.9 per cent of all employees, each losing 16 hours on average.

● The total number of employees in employment in January by the index of industrial production was 9,088,000, a fall of 45,000 from the previous month's figure. The seasonally adjusted figure, however, rose by 6,000 compared with December 1977, to 9,111,000, still lower than the seasonally adjusted peak of 9,184,000 in June last year.

Dirty jobs

The department lists three prominent stoppages during the month: a grading dispute by 120 progress chasers at Rolls-Royce in the West Midlands, when 800 process workers were laid off; the occupation over a still unresolved pay party claim by 300 strikekeepers at GEC Telex communications in Coventry; and a "dirty jobs" strike at Ebbw Vale steelworks, which

Basnett urges TUC link to aid jobless

FINANCIAL TIMES REPORTER

THE GOVERNMENT and the TUC should get together to tackle unemployment, Mr. David Basnett, general secretary of the General and Municipal Workers' Union, said yesterday. He predicted that unions would not accept a further rigid wage policy.

Mr. Basnett told a meeting of the union's Scottish regional council that the union movement had a responsibility to do something about unemployment rather than leave it all to the Government.

He called on the Chancellor to use his resources, both now and in his deployment of North Sea revenues, to promote jobs, training, differentials and technological change in industry.

public service employment, training subsidies and spending on young workers. Substantial capital investment, also was needed.

Unions should concentrate on eliminating overtime and reducing the working week. At the moment the Government's pay policy was inhibiting this, making overtime a ludicrously cheap option for the employer and a necessity for workers.

Unions had taken a grave responsibility on their shoulders in accepting wage restraint over the past two years but they were now left with problems of wage structure, differentials and technological change in industry.

Humber dock deadlock

THE STRIKE of 30 supervisors at the Immingham-based Humber Graving Dock and Engineering Company, which has caused more than 700 men to be laid off, is near the end of its fifth week with no sign of a settlement.

Discussions by the employers and the technical and supervisory section of the engineering union, which represents the supervisors, have ended in deadlock.

The dispute has stopped all maintenance work at two oil refineries with which the company has contracts.

It started over the dismissal of three supervisors, who, the company says, were absent without leave. The other supervisors went on strike, with a reinstatement demand which the company has refused.

The Randfontein Estates Gold Mining Company, Wit., Limited



Members of the Johannesburg Consolidated Investment Group of Companies.
Incorporated in the Republic of South Africa.

Western Areas Gold Mining Company Limited

Highlights from the 1977 Chairmen's Reviews

* Profit for the year amounted to R47 435 000 and dividends to shareholders totalled R18 947 000 (350 cents). Capital expenditure of R110 756 000 was financed largely by long term consumer loans and bridging finance totalling U.S.\$103 800 000.

* Underground operations were expanded to include both Cooke No. 2 shaft and the S.D. 33 shaft at Randfontein Section. The Millsite uranium plant was commissioned and the new integrated gold and uranium Cooke Plant is currently being commissioned well ahead of schedule.

* Ore broken at Cooke No. 2 shaft and S.D. 33 shaft, surplus to the capacity of the Millsite plant, is being stockpiled on surface to provide a reserve of available ore when Cooke Plant commences milling in mid-1978.

* Dewatering of the Randfontein Section has proceeded apace and the water level is now close to 21 level, 950 metres below surface. The re-establishment and re-equipping of each level and of stope faces is proceeding as planned. Stopping operations commenced in mid-1977.

* A significant decrease in the overall gold recovery grade is inevitable when additional low grade ore from the Randfontein Section and Cooke No. 2 shaft is treated. Total production of gold will, however, be greater as a result of the increased throughput and uranium revenue will compensate for any effect on revenue of the lower average gold recovery grade.

* Once Cooke Plant is on stream consideration will be given to further underground expansion and a decision to proceed with the sinking of Cooke No. 3 shaft is anticipated in the latter part of 1978.

* An agreement has been entered into with the Johannesburg Consolidated Investment Company, Limited whereby Randfontein, has a 50% participation in prospecting for, and if economically feasible, the mining of uranium in the Karoo basin of the Cape Province and Orange Free State.

Johannesburg
30th March, 1978

Bernard Smith,
Chairman

* Profit for the year was R14 011 000 and capital expenditure amounted to R6 688 000. Dividends totalling R5 240 000 (13 cents) were paid to stockholders.

* Production was disrupted by a major underground fire and an estimated production loss of 238 000 tons milled was incurred. Fire fighting expenses amounted to R998 000 and an insurance settlement of R3 108 000 in respect of the loss of profits claim was received.

* Progress towards the planned position of the S.V. 3 sub-vertical shaft continued to be hampered by the intersection of water-bearing fissures. However new strategies were implemented and better progress is now being made.

* One of the primary objectives of the mine remains the attainment of a production level of 370 000 tons per month. It is intended to stockpile broken ore on surface in times of surplus underground labour in order to provide a reserve to be drawn upon when circumstances so require.

* Within the financial constraints imposed on the mine by the extensive capital expenditure programme necessary to develop and exploit the southern section of its lease area, the Board intends to examine the possible exploitation of all accessible reef horizons for uranium.

* Exploratory underground drilling from existing levels continued and uranium values show an encouraging consistency, particularly on the E9EC horizon. Development towards the area delineated by drilling as being the most favourable has commenced on 45 and 50 levels in order to confirm borehole results.

* Feasibility studies are continuing to establish whether uranium production is viable.

P. A. von Wielligh,
Chairman

The Board of Directors of Elsburg Gold Mining Company Limited draws stockholders' attention to the highlights of the Review by the Chairman of Western Areas Gold Mining Company Limited.

SUMMARY OF OPERATIONS

Randfontein Estates

1977	1976	Year Ending 31st December.
1 131	944	Tons milled 000's
15.46	16.95	Recovery - grams per ton
R21.23	R18.11	Cost - per ton milled
R41.94	R39.02	Profit - per ton milled
U.S.\$145	U.S.\$123	Average price per ounce

Western Areas

1977	1976
3 579	3 585
6.00	6.37
R21.56	R17.22
R4.30	R4.57
U.S.\$147	U.S.\$120

The annual general meetings of these companies will be held in the board room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg on Wednesday 28th April, 1978 at Western Areas Gold Mining Company Limited 09h15; Elsburg Gold Mining Company Limited 10h15; The Randfontein Estates Gold Mining Co. Witwatersrand, Limited 11h15.

Notes: Copies of the full Chairmen's Reviews and Annual Reports of each Company will be sent post-free on application by letter or telephone to:
The London Secretaries,
Barroto Brothers Limited,
99 Bishopsgate, London EC2N 3XE.
Tel. No: (01) 588-7011.

Name
Address

Belfast private hospital row

ULSTER officials of the Confederation of Health Service Employees have asked the Irish Congress of Trade Unions to block the construction of a private hospital in Belfast. They say it would provide favourable treatment for those who could afford it, and would deprive the National Health Service of professional staff.

Plan to log sea progress after loss of boat

BY OUR ABERDEEN CORRESPONDENT

SCOTTISH fishermen and coastguards will meet tomorrow week to discuss methods for postponing reports at sea after the loss last month of the seine net boat *Estegrise*.

The Fraserburgh boat was lost with her eight-man crew 90 miles east of Shetland, but the alarm was not raised for five days after her last known radio contact.

The two main fishermen's organisations covering herring and white fish catchers in north-east Scotland have since asked for the introduction of a special waveband allowing boats to make 24-hour position checks.

Merrill Lynch International now accepting orders for the European Options Exchange in Amsterdam



Earlier this year, Merrill Lynch International & Co. was admitted to membership on the European Options Exchange, and today we are pleased to announce that Merrill Lynch International offices around the world stand ready to accept orders for European Options Exchange transactions when trading commences next Wednesday in Amsterdam.

Merrill Lynch's Dutch affiliate, Merrill Lynch N.V., has also been admitted as a Clearing Member and a Floor Broker (as well as a Public Order Member), and its clearing office in Amsterdam at Dam 27 is now open for business. Financial institutions interested in availing themselves of these clearing services should get in touch with Geoffrey Stanley in Amsterdam (Tel. 20-26-4888).

Merrill Lynch has been a leading participant in the American options markets, and the experience and expertise gained there will now be available through our worldwide communications network at any of the Merrill Lynch International offices noted below.

There is little time to lose if you want to start dealing when the Exchange opens.

Merrill Lynch International & Co.

Branches and subsidiaries and affiliates in Abu Dhabi, Amsterdam, Athens, Barcelona, Bahrain, Brussels, Buenos Aires, Cannes, Caracas, Dubai, Düsseldorf, Frankfurt, Geneva, Hamburg, Hong Kong, Kuwait, London, Lugano, Madrid, Manila, Milan, Montevideo, Panama City, Paris, Rome, Rotterdam, Sao Paulo, Seoul, Singapore, Sydney, Taipei, Tokyo, Vienna, Zurich. Joint venture in Tehran Iran Financial Services Co.

'Reversing the engines of exodus'

"THE ENGINES of exodus have been reversed." That phrase, the power to provide financial aid to the policies of a and other aid to industry, par- generation aimed at dispersing ticularly but not exclusively in jobs and people away from the inner cities. Success in over-crowded and decaying helping industry in areas such urban areas, is a favourite of as Lambeth or Liverpool could Mr. Peter Shore's since he took eventually have a far greater on the job of Environment significance in the long term for Secretary two years ago.

During that time he has Doncaster. Success in one area effectively put the brakes on the will, it is argued, lead to highly successful Location of greater local authority involve- Offices Bureau in reiting com- ment throughout the country panies away from London and virtually sounded the death- knell to future expansion of the New Towns.

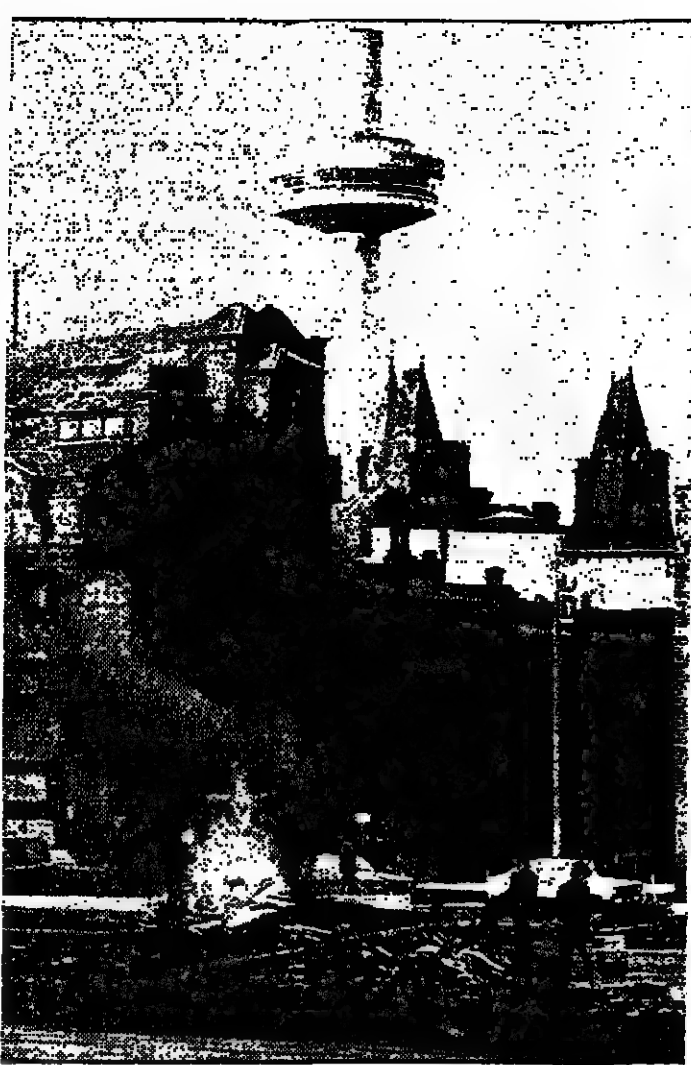
Yet his strategy has not just been a negative one. In place holds and it is the sheer scale of the "engines of exodus" Mr. of the crisis facing the cities in Shore has attempted a double the 1970s that has concerned policy. In the immediate future Mr. Shore. He is, incidentally, he is setting great store by the first Environment Secretary Government's Inner Urban for 20 years to represent an Areas Bill, which has just com- pleted its committee stage in the Commons, to provide a (Tower Hamlets, Stepney and regeneration of the inner cities. Poplar).

In the longer term, however, Mr. Shore is hoping that his stay at the Department's offices in Marsham Street, West- minister will mark the begin- ning of a new attitude among civil servants and local au- thorities towards helping indus- try. He believes that the immense power of local gov- ernment — the largest organisa- tion in the country — must be harnessed to help overcome the problems of the businessman at a local level.

Wholehearted

Local authorities, he argues, have a vital part to play in the Government's industrial strategy. But first they must overcome their traditional reluctance to involve themselves in industrial matters as whole- heartedly as they are respon- sible for schools, roads, and social services. Local authori- ties, however, and even some of Mr. Shore's civil servants at the Department of Environment, still have to be convinced that such radical involvement in industry is the right path to follow.

Hence the importance of the Inner Urban Areas Bill. Mr. Shore sees this legislation as the catalyst to spark off a change in attitudes within the and 15 local authorities also town halls. The Bill will, for deemed in need of special help the first time through general are currently drawing up a



Decay in the cities: part of Liverpool (left) and London's Dockland with Mr. Peter Shore, Environment Secretary, superimposed in the foreground.



three-year programme for action to start in the 1978-80 financial year. The existing authorities with urban problems urban programme's allocation can still receive help. In of £30m. a year is to be in- creased to £125m. a year, with the bulk of aid going to the authorities. The second plank in the policy for the inner cities is the powers being made available in the Inner Urban Areas Bill. Although section 137 of the 1972 Local Government Act and extra investment in capital pro- jects announced last year by the Chancellor as a boost for the construction industry, and the partnership areas in Lon- don, Birmingham, Lillingston and Hackney will in future take precedence over the Assisted Areas when Industrial Develop- ment Certificate bids for new projects are allocated. Although the new urban pro-

gramme is concentrated on 22 other local authorities in need able to give grants towards rents to help companies taking on leases not owned by the local authority. And interest free loans for up to two years will be available for bringing inner city sites back into use. Mr. Shore accepts that "few large-scale employment projects will be attracted to inner cities by the exercise of the Bill's powers." Instead, he is pinning his hopes on the medium and small sized companies being lured back to the inner cities. Critics of the Bill, including Mr. Michael Heseltine, the Con- servative Opposition spokesman on the environment, argue that it will have little practical effect. "Its impact on all except a negligible number of companies will be nil," says Mr. Heseltine. Yet Mr. Shore remains con-

vinced that the Bill will be effective when considered in conjunction with the "main thrust of government assistance for housing, education, roads, and so on."

But it is also in the Bill's wider context—acting as a catalyst in changing local authority attitudes towards local industry—that Mr. Shore is looking for success. He believes that in the past local authorities have been less alert to the problems of the businessman and have given a much lower priority to the needs of industry and employment in their areas.

Circular

Formal advice to local authori- ties on how to help industry has been given by the Government in a recent circular. But Mr. Shore is well aware that such advice is easy to give; the im- portance is how local authorities respond.

The circular argues that in- dustrial success depends greatly on confidence, stability, and the facility to adapt production to changing demand. "Local authorities can do a great deal to create the right atmosphere for growth by showing an awareness and understanding of the needs of industry and a willingness to help," it says. "Keeping in- dustrialists informed of develop- ing policies and providing them with opportunities for feeding in their own views is obviously important. Many authorities have already recognised the advantages for them and for industry of having effective and regular means of communication at both member and officer levels."

Moreover, it reminds local authorities of the importance to industrial companies of a quick and constructive response to in- quiries, and suggests a named official or coordinating unit who would be easily accessible for industrial matters. "Such a focal point should be respon- sible for providing a link with local employers; acting as a readily available source of in- formation; co-ordinating the authority's own information on the local industrial position with Government departments and other bodies; guiding industry through local authority pro- cedures; explaining exactly what help the authority can or

cannot provide; and suggesting alternative sources of assis- tance."

Specifically, local authori- ties are asked to give priority industry for planning reques and to consider propos- schemes "flexibly." The Depa- ment of Environment h recently speeded up its part the planning process. Lo- authorities are also asked release land for industr development where possible to give priority to hous employees of companies mov into the area.

Yet Mr. Shore's approach been heavily criticised. So of the most pungent comm have come from the Lab Party itself. "The objective creating confidence for inv ment are unrealistic w industry in general is alre running at 80 per cent, or than full capacity through of demand," argues a Lab Party document. And it pe out that "it is crucial that n is offered to local author than advice alone."

But for Mr. Shore, prob the biggest question mark the strategy is how much he change attitudes both w his own department and an local authorities before eventually leaves Environ either for another Cabinet or the Opposition benches, policies for both the cities and for greater inv ment by local government industry have owed a great to his personal interest energy. Whether they survive his departure ren to be seen.

Eventually, however, talism may provide at some of the answers. A nu of local authorities are for their own partnerships local companies in an art to provide jobs. For exam private company, Westm Bunting, has been encou to create an industrial o for small factories on the vacated by A&E in Woolvi And the Greater Lo Council is currently private consultants, B Wilcox, to create a "force" between the privat public sectors able to con the private sector's fair ability to decide and act qu with the social responsi and accountability of p bodies.

CONTRACTS AND TENDERS

CALL FOR TENDER



EMIRATES & SUDAN INVESTMENT CO. LTD.

TENDER FOR THE CONSTRUCTION OF 200 WAREHOUSES

(RED SEA REGION)

PHASE ONE: 34 WAREHOUSES AT PORT SUDAN

- The Chairman of the Board of Directors, Emirates & Sudan Investment Co. Ltd., invites Tenders from competent contractors for the construction of 34 "Thirty four" Warehouses complete at Port Sudan (D.R. of Sudan) as phase one from the total number above.
- The Tender Documents "in English only" can be obtained from the office of the Managing Director of the Emirates & Sudan Investment Co. Ltd., 16 Babiker Bedri St., P.O. Box 7036, Khartoum, Telex 524 EMSU KM, Telegraphic Address: EMSU Khartoum, during office hours against payment of L.S.100 (one hundred Sudanese pounds = £145 US\$290) non-refundable.
- Tenders will be accepted for 4 warehouses as a unit and Tenderers should deposit a sum of L.S.4000 (Four Thousand Sudanese pounds) or its equivalent in other convertible currencies either by certified cheque or a letter of guarantee from a reputable bank valid for at least three months after the closing date as a preliminary deposit in the name of the Managing Director, Emirates & Sudan Investment Co. Ltd., for each unit. Tenderers for more than one unit should multiply their deposit accordingly. Separate offers per unit for lighting and fire systems may be added as option.
- The successful Tenderer/Tenderers shall be asked to sign formal contract within two weeks after being notified of the acceptance in writing and to complete the deposit to 10% (ten per cent) of the total value of the contract either by a certified cheque or a letter of guarantee from a reputable bank valid for one year after handing over all works. Other forms of guarantee may be required for longer period. Any other plans for payment that may lead to the reduction of the cost could be proposed by the tenderers. If the contractor fails to sign the contract within the specified time, he shall lose his right to recover the preliminary deposit.
- The preliminary deposit shall be refunded to the unsuccessful tenderers two weeks after the firm award of the contract.
- Tenderers shall state clearly the following:
 - The names, qualifications, and experience of engineers and technicians who will be responsible for the execution of the works.
 - Examples of similar projects they have executed.
 - A detailed programme specifying the progress of the works and the time required for the completion of all works specified in the tender and shown in the drawings, as from the date of the signature of the contract.
 - A list of equipment and machinery in their possession necessary for execution of the works.
- The supply of all materials, equipment and machinery whether local or imported necessary for the execution of all works is solely the responsibility of the Contractor.
- Tenders shall be valid for at least three months after the closing date mentioned in para (12) below. The offer may be based on the detailed alternative or for an accepted alternative to be presented in detail to the Managing Director.
- All information relevant to the tender shall be submitted in English Language.
- For imported items, The Emirates & Sudan Investment Co. Ltd. will directly pay all insurance, clearance, customs and other Port charges.
- Foreign Currency will be paid directly from The Emirates & Sudan Investment Co. Ltd. reserves with The National Bank Abu Dhabi.
- Tenders should bear the prescribed stamp duty and should be addressed in sealed envelopes bearing the words (TENDER FOR THE CONSTRUCTION OF WAREHOUSES AT PORT SUDAN), to The Managing Director, Emirates & Sudan Investment Co. Ltd. and should be delivered to the Tenders Box at the Company's Head Office, 16 Babiker Bedri St., 3rd Floor, Khartoum, Sudan, not later than 12:00 Noon Sudan Time Tuesday the 20th of June 1978.
- Any tender which does not comply with any of the above-mentioned requirements will be rejected.
- The Chairman of the Board of Directors, Emirates & Sudan Investment Co. Ltd., is not bound to accept the lowest or any other tender.

A FINANCIAL TIMES SURVEY

WORLD BANKING

PART I MAY 22, PART II MAY 30 1978

The Financial Times annual Survey on World Banking will be published in two parts—Part I on Monday May 22 and Part II on Tuesday May 30. The proposed editorial content is set out below.

Part I
INTRODUCTION The world economic and financial scene. World-wide recovery from recession remains sluggish, despite growth in the U.S.

INTERNATIONAL MONETARY ARRANGEMENTS The International Monetary Fund calls for more rapid economic expansion; the role of the Fund and central bank arrangements in providing support for countries with balance of payments problems.

OIL FUNDS Outlook for the oil price against the background of the decline in the dollar; impact of the growing import demand of the oil-producing countries.

INTERNATIONAL BANKING Further growth in international activities against the background of generally depressed home demand in the industrialised economies.

INTEREST RATES Sharp declines in many European countries, particularly Britain, reflecting in part the weakness of the dollar. **GOLD** The market price has risen sharply to its highest levels for nearly three years as demand has revived.

EUROPEAN INTEGRATION The idea of monetary union has been revived by Mr. Roy Jenkins.

BANKING REGULATIONS Important steps have been taken within the European Community towards the harmonisation of banking controls; new legislation expected in the U.K. **THE CITY OF LONDON** The City has held on to its position as a leading international banking centre, but there are signs of increasing competition from other centres.

FOREIGN BANKS IN LONDON The international banking community continues to find the City attractive as a centre for offshore operations.

MULTINATIONAL BANKING Considerable changes have taken place in the consortium banking business.

EXPORT FINANCE Important moves in Britain to reduce reliance on sterling and continued international concern over the issue of competition in export finance. The remaining articles will review economic and industrial developments in the countries listed, with particular reference to the banking and financial sectors:

FRANCE
WEST GERMANY
ITALY
NETHERLANDS
BELGIUM/LUXEMBOURG
DENMARK
IRELAND
SWITZERLAND
AUSTRIA
NORWAY/SWEDEN

SPAIN
PORTUGAL
AUSTRALIA
NEW ZEALAND
CANADA
SINGAPORE
HONG KONG
FINLAND
TURKEY

Part II
THE POUND The sharp revival of confidence in sterling, coupled with the weakness of the dollar, has presented problems for the U.K. Government.

THE DOLLAR Sustained pressure on the U.S. currency against the background of the growing U.S. balance of payments deficit.

EUROMARKETS Further expansion of activity in both the medium-term credit market and Eurobond issues.

PROJECT FINANCE Development of international banking to meet the needs of large-scale project finance.

NON-OPEC DEVELOPING COUNTRIES Reliance on a recovery of commodity prices as the industrialised countries expand; balance of payments problems and concern over possible defaults on their debts.

DEVELOPMENT FINANCE The role played by private banks and the official agencies in overcoming the difficulties of the less developed countries.

NEW CENTRES Growing competition felt by the established financial centres from new markets and offshore banking centres. Economic, financial and industrial developments in the following countries:

U.S. (home)
U.S. (abroad)
JAPAN (home)
JAPAN (abroad)
COMECON
YUGOSLAVIA
ISRAEL
GREECE
ARAB WORLD I
ARAB WORLD II

SOUTHERN AFRICA
BLACK AFRICA
IRAN
THE CARIBBEAN
INDIA
PAKISTAN
SRI LANKA
LATIN AMERICA
CHINA
SOUTH KOREA

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The Management Page

EDITED BY CHRISTOPHER LORENZ

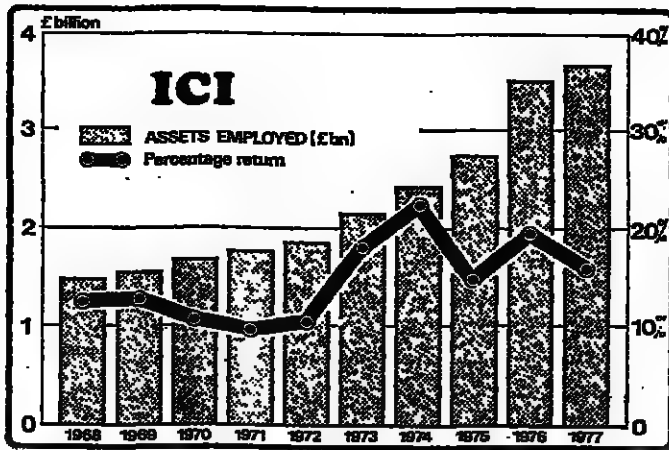
ICI — seeking the right chemistry

MAURICE HODGSON is taking over the chairmanship of Imperial Chemical Industries, the U.K.'s largest industrial group, in troubled times. His predecessor, Sir Rowland Wright, who officially retires from the ICI Board to-morrow, has already virtually written off 1978. He does not see any major improvement in world market conditions for the next 12 months, and for an industry whose fortunes are suddenly becoming much more tightly tied to the general progress in world trade, that suggests serious problems ahead.

It is not a prospect unique to ICI. Around the world the giant chemical multinational companies have been reporting falling profitability and stagnating sales. Hoechst AG, the West German parent concern of the world's biggest chemical company, saw profits fall 12.1 per cent. last year with sales down 2 per cent. Montedison, the perennially troubled Italian chemicals conglomerate, leads the list of the industry's losers with a deficit in 1977 of well over £300m. Even Dow Chemical of the U.S., for many years fortune's favourite child, saw its net earnings fall some 8 per cent. in 1977.

ICI bucked the trend longer than most, thanks to its wide geographical spread and diversified productions. But by the end of 1977 its profits had been cut back by 10.5 per cent. to some £483m, and most analysts are predicting a further drop this year, perhaps to the £430m. mark. It has won back the blue ribbon of being Britain's biggest exporter—£35m. last year—but that is small comfort to Maurice Hodgson as he looks ahead.

"If we are to keep up our investment programme to get to our strategic objectives we will have to improve profitability," he states plainly. For the time being he is confident that ICI can bridge the gap because of its enviable strong financial position, enhanced two months ago by its second venture into the U.S. debenture market to



raise \$175m. In recent years its liquidity has improved beyond recognition. ICI to-day is a different company from the one that in the mid-1960s was forced to stop construction of some major plants in mid-stream because it was running short of cash.

It is a lesson Maurice Hodgson is unlikely to forget. In 1966 he was drafted from the petrochemicals division on Teesside to ICI's headquarters at Millbank, to take over the newly-created post of general manager—company planning. From here he was instrumental in giving ICI its first effective system for capital budgeting, and he is well aware of the disastrous consequences of relaxing the present tight central control of new projects. By raising money when the opportunity arose, rather than when necessity demanded it, ICI has since provided itself with a cushion against short-term falls in profitability. But as the new chairman points out: "This cannot last indefinitely."

Growth in demand for chemicals has turned down, partly because of general slow growth in the world economy, but also, says Hodgson, because

the rate at which chemical products can be substituted for natural substances is now leveling off. The high penetration reached in fibres, for instance, does not leave much room for future expansion. Price increases for many products are no doubt justified, but "it would be unwise to rely on getting prices up. There is a great need for this, but the climate is not easy."

So what is the path left for ICI? With its stated strategy of going for greater shares of the West European and U.S. markets, acquisitions are clearly a possibility. It certainly has the financial strength to make such a move, but the company's new chairman is unwilling to commit himself on this point. For the time being Hodgson will only make clear his conviction that the main option to go for is a dramatic reduction in costs. He has set as priority in his first months as chairman to improve efficiency, particularly in the use of energy and raw materials. Last year some 88 per cent of the group's sales income of £46bn. was spent on raw materials and purchased services. Company studies show that

Kevin Done looks at how ICI is coping with the world recession and the role of its new chairman

ICI's record of efficiently using capital costs and cut energy raw materials can already bear comparison with many of its European competitors. Such as announced plans for installing—BASF, Akzo, Hoechst and by 1982—430,000 tonnes of Montedison. But it is still far behind the U.S. capacity using the new process. majors, Du Pont, Monsanto and ICI chairmen are in the habit of pointing out that a change of reducing energy and feedstock costs must come the more skillful running of plants.

In the face of large surplus overcapacity, particularly in petrochemicals and plastics, companies are increasingly choosing to shut down less economic plants in one part of Europe, in order to run others at full capacity. In By last year this effort was representing a saving of some £40m. a year.

Maurice Hodgson's first priority is clearly to improve substantially on this record, but close behind he is also conscious of the gap in labour productivity that exists between ICI and its biggest rivals on the continent and in the U.S. Wages and salaries take about 27 per cent of sales income, a fact that belies the common belief that ICI operations are not labour intensive. The image is understandably fostered by modern petrochemicals operations; £150m. can be invested in a new ethylene plant and the number of ICI jobs created is minimal. But such a picture tends to omit highly labour-intensive activities such as the packaging of pharmaceuticals at Macleodfield, the manufacture of detonators at Ardeer or of paint at Slough.

The philosophy is already at work. The new 120,000 tonnes a year polypropylene plant that ICI is building at Rosneath, Holland, is using a unique process developed by BASF, the West German chemical company. Compared with existing plants the new gas-phase process is said to represent capital cost savings of at least 20 per cent.

ICI, which pioneered another major plastic, polyethylene, will, in the future, have to follow carefully the progress made by Union Carbide in this field. The U.S. company claims to have made a significant process advance, which will halve



Maurice Hodgson looking for a consensus

"Productivity must be improved," says Hodgson, "but I wish we could find a new word; people are fed up with hearing it." Understandably it is a sensitive issue with the trade unions. They see a big capital expenditure programme rolling forward—£491m. last year and £700m. this year—but the net result is a reduction in the numbers employed by ICI, down 5,000 (4,000 of those in the U.K.) last year to 154,000 worldwide. Since 1973 many of the jobs have disappeared from the loss-making fibres division, where ICI has been trying to reduce the workforce by 30 per cent, while going for an increase of 30 per cent in production.

In such a ruthless process, what place do ICI's social obligations command, as the Du Pont, Hercules, and Monsanto. It compares more favourably with continental rivals, but is behind the big three of the generally in manufacturing. West German industry, it is a longer any territorial division industry are in decline. The delicate equation to balance. In

question is how they will decline. If we go for job preservation the numbers in manufacturing will still decline, but we will become uncompetitive and whole factories will have to close.

"If we improve productivity, the numbers will still go down, but it will be in a way that generates more wealth and creates work in other sectors. Some 40,000 jobs in engineering and construction are created by the present capital expenditure programme."

In terms of sales per employee, ICI's productivity is improving, and it was boosted by last year's sale of its 63 per cent stake in Imperial Metal Industries. But company studies show it still lagging well behind U.S. rivals, such as Dow, Du Pont, Hercules, and Monsanto. It compares more favourably with continental rivals, but is behind the big three of the generally in manufacturing. West German industry, it is a longer any territorial division industry are in decline. The delicate equation to balance. In

Hodgson chooses his new role

THE CHAIRMAN of ICI is not a chief executive, says Maurice Hodgson, who takes over the job to-morrow. "We haven't had one of those for a long time; the business is complex."

"The chairman is the man who organises the work of the board and tries to achieve the consensus view on major issues. He must judge carefully when it has been reached, because consensus is not the same as unanimity."

Much of the skill lies in the delegation of the workload, not only of the chairman, but also of the entire board, to make the best use of the considerable management resources available in the company.

His predecessor, Sir Rowland Wright, a former personnel director, took the opportunity of the chairmanship to become personally acquainted with many of the more far-flung parts of the ICI empire, and became deeply involved in the debate sparked off by the Bullock Report on industrial democracy.

ICI's external and internal relations can easily swallow up the chairman's time, but

Hodgson is determined to find the hours to remain directly involved in the running of the business. His expertise in recent years has been developed in the fields of investment and finance and he is too closely engaged to give them up completely.

With a capital expenditure programme of £700m. this year and more in 1979, the importance of the ground rules established by the new chairman in his "twelve planning roles" can be easily appreciated. His intimate knowledge of this vital area of group affairs brings a unique experience to the top of the company.

He plays down, however, the degree of influence that a chairman can bring to bear. "Corporate strategy operates over a longer time-span than the stay of one chairman. The investment programme has to look over a five-year period. It is not written in tablets of stone, but it does not change radically over that period."

In contrast to this picture of apparent cautious development the legend is also growing that ICI has appointed a gambler as its latest chairman.

As a description of Maurice Hodgson's private life it is true to a degree, but it hardly reflects fully the increasingly dominant role he has played in ICI's affairs over the last 26 years.

His public ambition might be to make ICI a greater force on the continent and in the U.S., and to make it more productive and efficient, but his private goal is to own a racehorse. Unlike the doubts that can surround corporate objectives, this aim at least could well be achieved, by next year.

He enjoys racing as a social scene and it is a fertile source of anecdotes for the growing number of functions that come with the job of chairman of ICI. And it is to metaphors of the gambler that he turns to describe the extraordinary trials he has undergone to save his eyesight—operations which he describes with a self-effacing humour which belies his courage and determination.

From the age of about 40 his eyesight began to deteriorate, and it became obvious that he would have to undergo a corneal graft on both eyes. In his own words, the first one was a disaster. "I then had to play double or quits with the second eye." It was successful, but the operation revealed that there was also a cataract. The gamble had to be faced up to again and repeated. Mercifully the gamble paid off.

To cope with the years when he was unable to read, in the conventional sense, Hodgson assembled an array of aids, which pay tribute to both his imagination and determination. One of these was to have documents recorded for him, but because listening to tapes was too time-consuming a process, he trained himself to listen to the tapes at 24 times the normal speed. He used an electronic device to unscramble the tapes and stop them sounding like Donald Duck.

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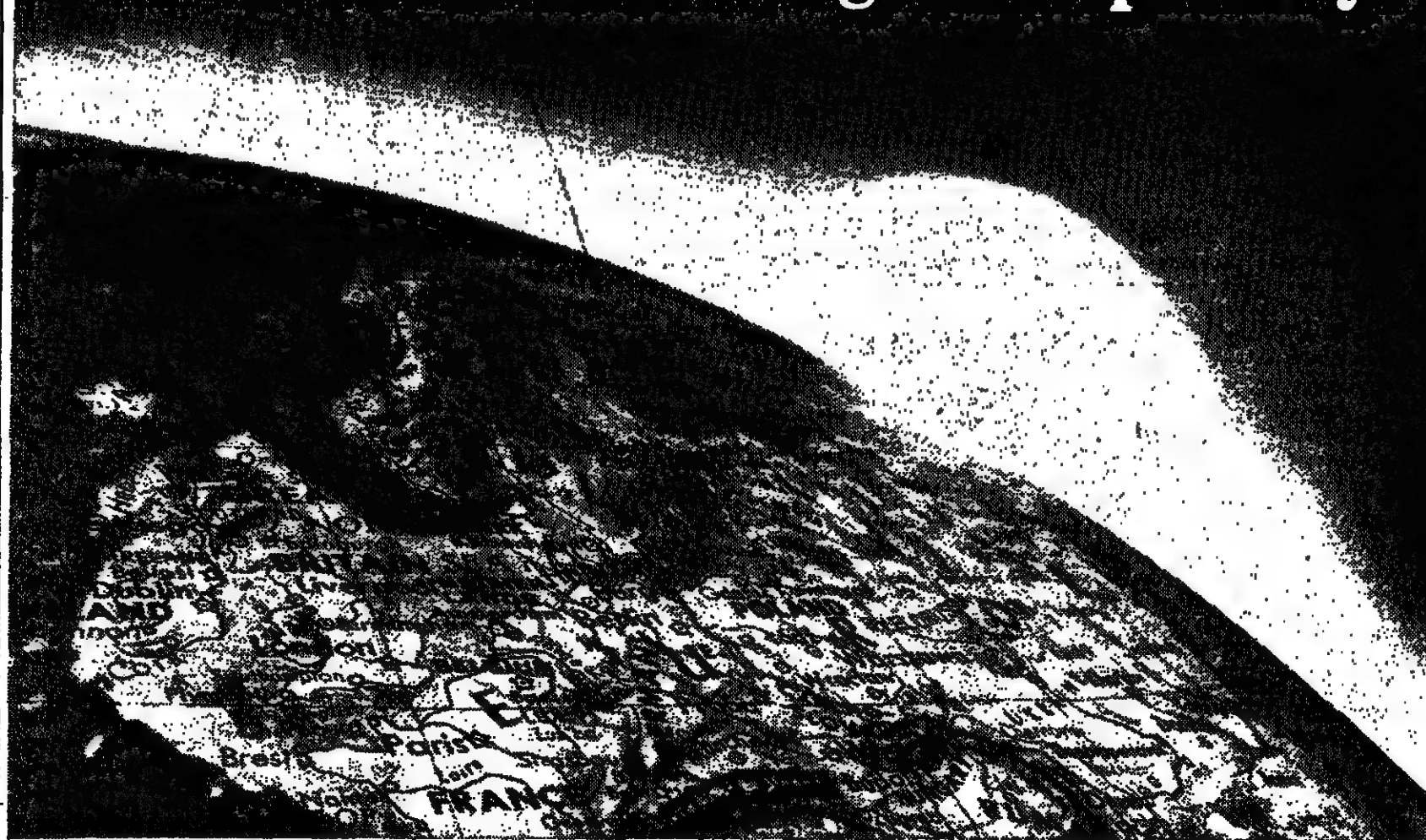
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Mary Miller and James Grant

[illegible]

Cinema

The film is a sequence of love scenes presented so frontally and explicitly that the possibilities for titillation quickly exhaust themselves and the audience starts to look at the film simply as a film: as a raw, perfunctory and unexciting collection of ritual. At No Corrida means *Corrida* of Love and there is something like a bullfight in the way the man and the girl alternately tease, caress and gore each other. The moment of supreme passion and contact between the two becomes also the moment of death. The language of sexuality intrudes on the whole film (even the title) and the whole film is a carnal journey by way of

An elderly Frenchman (Fernando Rey), resident in Spain, is boarding the train from Seville to Paris. His departure has been precipitated partly by a sudden outbreak of terrorist violence in the city, and partly by the emotional discomposure of a broken love affair. He tells the story of the latter (in flash back) to a group of sympathetic fellow-travellers on the train. The young woman he loved, formerly a serving girl in his home, had come to live with him after some forest weaving, not unmixed with an air of prostitution. Unfortunately, once arrived, she seemed devoted more to her chastity than to him, and he could find no way to consummate their relationship. Sometimes it seemed that she was deliberately hurting and flouting him (as when he discovered her harbouring his friend in her room), and sometimes that she was as cruel only to be kind (as when she tearfully assured him that she was only "testing" his love). Finally a reconciliation of sorts was achieved; but there was still time for tragedy to intervene. This story-within-a-story of an old man's infatuation is given an added poignancy by the fact that the girl is played in alternating scenes by two different actresses.

Bunuel has no time for the usual Messiahs or heroes, and even the groups that try to pave the way through or one. The only Utopia he has is one in which individualism can pursue his passions undisturbed by the anarchy of the society. Bunuel's anarchy is anarchy with a human face. And also with a comic one. The film man is packed with surreal throw-aways like *In Discreet Charm of the Moon*—a packet of water poured on you yesterday, a man on a railway platform, a dwarf then introduces himself as a

At the ICA there is a winsome women's Lib comedy from Denmark called *Take It Like a Man, Ma'am!* I applaud most of what the film has to say about the stereotypes of sexual and domestic role-playing, but I wish it didn't take so long to say it or attempt to be a witless, village-idiot attempt at satire. It is insignificant that the film was made by a group ("The Feders Collective"), and not by an individual. The first thing people often lose when they are together and sink their supermental differences in a common ideology is their sense



Festival Hall

by DOMINIC GILL

It was not unapt, perhaps, that the first part of the programme should have offered us a pair of old and highly characteristic. At the same time, it was no less profoundly original than the works, each in its own way a true example of echt-Messiaenian spin-sugar: the short *Symphonie pour Six*, Socrate et le serpent by Igor Chalkovsky and Ravel, spiced with some Greek strains of Bartok, which Messiaen composed at the age of 22 soon after his appointment as assistant conductor of the Orchestre des Poemes pour Mlle for soprano and orchestra of 1936, that extraordinary essay in religious sentimentality, cry and pompous by the title, *Messiaen Mirrors*, and *Mirrors* merely and so hard to stomach. Felicity Palmer was

very capable, rather straightforward, not terribly convincing, a more explicit, more reading, perhaps, an irretrievable shine—lipstick, and the like, have drawn us better." The evening's two substantial came in the second half: secure, fine-grained performance of *Osleusar exotiques* was none Lord as piano solo: hard, brilliant, sequentially disoriented, and shapeless, face, disconcerting, and a kamikaze account of one of Liszt's masterpieces of the 1840s, 1890s, *Et exspecto resurrectionem mortuorum*—its force presented in the church, cathedral, even in the open air at high mountains") duty by the familiar surround of the busy, overabundant of the Festival Hall

Local authorities which did not do enough to support arts festivals were criticised yesterday by Mr. Kenneth Robinson, chairman of the Arts Council.

"So many local authorities leave the greater part of the financing to the energies of the organiser in raising money from business sponsors, generous individuals and the Arts Council,"

aged performances of Britten's opera *Noves Fludde* and in a

(Incorporated in the Republic of South Africa)

The Chairman, Mr. E. Pavitt, reports to shareholders

With the depressed South African economy showing few signs of an upturn during 1977, the group industrial interests did well to earn improved profits which more than compensated for falls in dividends received from our mining investments. In the circumstances the consolidated net profit of R37.7 million (62 cents per share) represents a satisfactory outcome when compared with that of R33.3 million (55 cents per share) for 1976.

GOLD AND URANIUM

In spite of the restriction of pay increases to 5-6 per cent, working costs continued to rise at almost double the rate of the consumer price index, due mainly to the influx of largely untrained black labour, coupled with high labour turnover, the introduction of the eleven-shift fortnight and disproportionately high increases in certain key costs.

The gold market continues to strengthen. Fabrication demand and sales of coins exceeded the supply of newly mined metal for the second year in succession. The speculative and investment buying associated with the weakness of the dollar has however brought a degree of instability into the market and some reaction may occur later in the year.

After a prolonged and costly exploration programme we are sufficiently encouraged with the results obtained to be in the final stages of evaluating a potential uranium/gold mine in the Orange Free State, south of St. Helena Gold Mines. If a decision is made to bring the project into production a very substantial cash investment will be required.

PLATINUM

For most of 1977, platinum was traded below producer price and only towards the end of the year were there signs of a revival.

Impala Platinum was able to maintain its planned production rate of 700,000 ozs. of platinum a year.

INDUSTRIAL

Our industrial interests are predominantly in the paper, packaging and engineering fields where market conditions were uniformly depressed and opportunities for increasing turnover or raising prices were limited. Improved profits were therefore possible only as a result of rationalisation, containing costs and improving efficiency and productivity. In these circumstances, it is a credit to all the group's industrial interests that earnings overall were up 13 per cent, on 1976 figures.

Prospects for 1978 must be seen against the continuation of poor economic conditions and a number of major uncertainties. Despite this, I believe that the strong enterprising management teams heading our industrial subsidiaries will make the most of opportunities and will take full advantage of any improvement in the South African economy.

OUTLOOK

Loan financing plays a major role in the three new mining ventures with which we are currently involved and in respect of two of these we have had to provide substantial guarantees. This is becoming a standard pattern in modern mining finance and until there is some general revival in the world demand for metals and minerals, the existence of such commitments inhibits further new projects or the expansion of existing ones.

South Africa's abundance of natural resources and possession of technical and entrepreneurial skills, enable us to make the economic progress needed to continue to improve the standards of the whole population.

To make the most of its opportunities, given the special problems of its diversity of races and cultures, South Africa will require a considerable degree of courage and imagination.

1976	1977	
33.3	37.7	courage and imagination;
21.6	23.2	also the understanding and
		enlightened self-interest of
		the world business
		community.

	1976	1977
Income after taxation	33.3	37.7
Dividends	21.6	23.2
Net Assets	413.3	481.7

*Copies of the Annual Report may be obtained from the London Secretaries,
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FINANCIAL TIMES

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Friday March 31 1978

New watchdog on trial

The Department of Trade and the Foreign Banks in London agreed 18 months ago that the security markets by some body similar to the U.S. Securities and Exchange Commission was not necessary and that a more effective system of self-regulation would be acceptable. It has now, therefore, given its approval to the arrangements worked out by the Bank of England, in consultation with various City associations, which involve the establishment of a Council for the Securities Industry. The authority of this Council will spring from the voluntary recognition by its members represented on it that "its recommendations, although without legal or binding force, could not in practice be ignored."

Yesterday's statement about the chairmanship, financing and operation of the Council, leaves a number of questions still unanswered. The framing of codes of conduct and the drafting of recommendations about U.K. and EEC legislation will be in the hands of a Markets Committee, while the Take-over Panel will continue to operate and enforce the code relating specifically to take-over practice. But it appears that the Take-over Panel, which is the model for the new and larger operation, may be given a wider role in investigating alleged breaches of the various codes to be drawn up by the CSI and recommending appropriate action.

Lay members

It is not clear, however, and probably can only become clear in practice, when the CSI will initiate investigations of its own and when it will decide that "breaches of its codes can be dealt with more appropriately" under the domestic codes of its institutional members. This raises the wider issue, that the extent to which individual codes of professional conduct operate at present differs widely from one association to another and that the ability of associations to discipline recalcitrant members is also variable. Not all the associations concerned with security markets have yet agreed to participate in the work of the CSI — it is proposed to invite representatives from

Incentives for productivity

EXT WEEK employees in British Leyland's car factories will be voting on whether to approve the introduction, on a 10-month trial basis, of incentive payments tied to higher productivity.

In British Steel, following an agreement reached between management and unions at national level in February, work measured incentive schemes are being introduced or extended in a number of plants, because of over-manning and inefficient work practices (many which are as much the fault of management as of the trade unions), productivity in British steel plants is well below the levels achieved in comparable Continental factories. This point was underlined last week in the Central Review Staff report on the motor industry, published in 1975. It has been highlighted in a study recently undertaken by Leyland management unions. The question is at can be done about it and, particular, what contribution is expected from the re-introduction of incentive payments.

Work rates

Until 1971 most of the Midland car factories operated a piecework system in which pay related directly to individual effort. But the system was allowed to fall into disrepair not only was the negotiation of new piecework rates a process of endless arguments and disputes, but there were anomalies between different groups of workers. At Leyland decided to measure day work in Ford and Vauxhall had been operating for many years, the preparation for the introduction of the new system inadequate: foremen and supervisors were not prepared to administer it; the price that had to be paid to secure acceptance of the arrangements, particularly the incentive scales, was excessive. Productivity fell as a result of the change.

At the Ryder Committee at the problem in 1975, the company felt that more time "to work out" standards of productivity as a basis for the potential for increasing productivity. They

the Foreign Banks in London and from Licensed Dealers — and the exercise of sanctions against outsiders who belong to none of these associations obviously presents special difficulties.

A similarly wide issue is implicit in the question, for whose sake the CSI is primarily concerned to police the markets. The belief appears to be that there is at present no great public concern about their operation, apart perhaps from the question of insider dealings which is one day to be dealt with by legislation. But concern could flare up again at any time. The presence on the Council of only three lay members, and those appointed by the Governor of the Bank, seems to understate the public interest involved, especially since there will be no machinery for aggrieved individuals to make their complaints heard. The general public, moreover, will probably not distinguish easily between financial misbehaviour in general and the particular kinds with which alone the new watchdog will be concerned.

Self-discipline

None of this is to suggest that the principle of self-regulation is not desirable in itself if it can be made to work. Statutory regulation of the markets is inherently slow, clumsy and — because of both the administrative and the legal costs involved — expensive. The setting-up of a body like the SEC is a last resort, and admission of failure and it is to be avoided if that is at all possible: the very fact that a Labour Government came to this conclusion after two years of cogitation is itself strong support for it. The Take-over Panel, moreover, though admittedly working in a more restricted field and among a small collection of professionals, shows how much self-regulation is capable of achieving. But the lack of urgency with which the CSI has been set up and the secrecy in which the preliminary consultations were held are not altogether encouraging. The new body deserves to flourish. We hope it will, as its mode of operation becomes clearer than it is at present.

The little war that went very wrong for Begin

BY DAVID LENNON, Tel Aviv Correspondent

MR. EZER WEIZMAN, the Israeli Defence Minister, went to Cairo yesterday on what was a desperate last minute bid to save not only President Anwar Sadat's peace initiative, but also the Government of Mr. Menachem Begin.

The journey bears all the hallmarks of the Begin Government's method of operation: it was hastily prepared, based on hope rather than careful planning, and the long-term political consequences were given less thought than the possible short-term benefits. The Government is deep in trouble both at home and abroad. While President Sadat has shown how unrealistic is the Government's foreign policy, the Israeli Prime Minister and his cabinet have been unable to display almost incredible ineptitude on a number of other issues. As a result, Mr. Begin is under challenge from within his cabinet, is being castigated by a revived opposition, and is facing growing public demonstrations calling for his replacement.

The rifts within the cabinet are so serious that Mr. Begin's party has quickly tabled an amendment to the Knesset (parliament) this week which would empower the Prime Minister to dismiss an individual minister without the whole cabinet having to resign, as is the law at present.

Mr. Begin's intentions are plain. He plans to try to restore order by a cabinet shuffle, though it is not yet clear which of the warring factions he will get rid of. But it is not at all certain that a house cleaning will save his own weakened position.

Mr. Begin's popularity has been slipping steadily. The most recent public opinion poll showed that 59 per cent of "Israelis thought that he was doing a good job as prime minister, as against 79 per cent in December. The main cause of disenchantment are the dead-end in the peace talks; the sharp confrontation with the U.S. rifts within the cabinet; failure to control the economy; the incursion into Lebanon; and Mr. Begin's choice of an almost unknown man as his candidate for the presidency.

Among the welter of comment about Israel's reaction to President Sadat's peace initiative, it was the Labour Party leader, Mr. Shimon Peres, who on Wednesday pointed to the key problem: "The Government has failed to understand the historic opportunity presented by President Sadat's visit to Jerusalem on November 19. The Israeli peace plan offers withdrawal from the bulk of Sinai, but Israel insists that the Jewish settlements built on occupied Egyptian territory since 1967 must remain even once the territory is returned to Egypt. This issue was raised only after the offer of withdrawal had been made, as was the demand that Israel should retain the three air bases it has built in the desert."

Most of the problems surrounding the return of Sinai, however, do appear to be surmountable — even the question of the settlements. It was the fear that Mr. Begin might be willing to let the settlements wither away, that led the ebullient Minister of Agriculture, Mr. Ariel Sharon, to start more land development work in Sinai, even as the Government was talking of withdrawal.

Slap in the face

The Egyptian leadership took this as a slap in the face, the American administration was angered, and many Israelis began to doubt the Government's desire for peace.

The real stumbling block to progress was, and still is, the West Bank and the issue of the Palestinians. Israel has refused to withdraw from the West Bank, and the most it was prepared to offer residents there was a form of local autonomy under continued Israeli military suzerainty. That ignored Palestinian aspirations for a homeland, and ignored the 1.5m. Palestinians living outside the territory controlled by Israel.

When the peace negotiation quickly reached stalemate, the Americans stepped in to try to bridge the gaps between the two sides. Despite two rounds of shuttle diplomacy by the U.S. Assistant Secretary of State, Mr. Alfred Atherton, and visits to Washington by both President Sadat and Mr. Begin, no progress has been made.

It was Israel's refusal to budge from the original peace plan which led to the confrontation in Washington last week between President Carter and Mr. Begin. Neither American blandishments nor hints of pressure moved Mr. Begin to amend his fundamentalist view that Israel must hold on to all of the biblical Land of Israel for reasons of history and of defence.

The Prime Minister, returned from Washington to a political crisis which threatened to topple him within days. The public was worried about the loss of American support, and Mr. Weizman had called for a "national peace government," a clear challenge to Mr. Begin to modify his position or resign.

But a carefully timed leak about an American official calling for Mr. Begin to be replaced rallied the Cabinet and the country behind the Prime Minister. All felt it their duty to show that Israel was not a banana republic whose leader could be ousted by grace and favour of the U.S. The Davar newspaper claims that the story was planted by the aides of Mr.



Mr. Begin with President Carter in Washington last week: Israelis are worried about the loss of American support.

Moshe Dayan, the Foreign Minister; the paper sticks to its story, despite denials from the Foreign Ministry.

Mr. Begin gained a temporary respite from the pressures building up around him. Mr. Weizman's call for a new Government was neutralised and he was made to look less than wholly loyal. He was also abandoned by those ministers who had been expected to back him. But the rifts within the Cabinet have not been healed. Mr. Weizman, still fairly broad, if somewhat fainthearted support from the ministers of the Democratic Movement for Change, from some of the National Religious Party ministers, and probably from the majority of the Liberal Party ministers.

This group represents about half of the Cabinet and believes that Israel should be more flexible in the search for peace. It is opposed by Mr. Dayan, Mr. Sharon, Mr. Begin's Herut Party, and a few other ministers.

The Liberal Party also has another fight with Mr. Begin. He refused to back its candidate for the mainly ceremonial post of president. Instead Mr. Begin produced an unknown scientist called Dr. Yitzhak Chavet. The total lack of enthusiasm shown for Mr. Begin's candidate forced his withdrawal, which was a blow to the prestige of the Prime Minister. But Mr. Begin still refused to back the Liberal

candidate and thus opened the way for a Labour Party man to become the next president. The key issue, however, remains that of peace.

The score card is even. Mr. Weizman won a victory when he forced a halt to settlement in the occupied territories after threatening to resign. Now his opponents have claimed their win by torpedoing his call for a National Peace Government.

Neither side is prepared to give way, and it will be up to the Prime Minister to decide which side must go when he changes his cabinet. It will be a hard choice for him. Emotionally he supports the hard line camp of Mr. Dayan and his friends. But he knows that Mr. Weizman has growing public support, and appears to be the one Minister whom President Sadat is really happy to talk to.

Chances of success

Because of that Mr. Begin decided to send Mr. Weizman rather than Mr. Dayan to Cairo to try to revive the direct negotiations. His calculation was complex. He knew that the defence Minister had the best chance of winning some concessions from the Egyptians. At the same time he knew that the chances of success were slim indeed.

If Mr. Weizman succeeds, then Mr. Begin can claim much

of the glory: if he fails, it will be easy to place a large degree of the blame onto Mr. Weizman, undermining his standing in public favour. If the Prime Minister chooses to dump the Defence Minister, he can also accuse him of letting the attack on Lebanon get out of hand.

Public elation caused by the revenge for the terrorist attack on a bus north of Tel Aviv almost three weeks ago has faded. People are beginning to question the entire concept, as well as the execution, of the invasion of southern Lebanon.

The heavy attack on Lebanon was supposed to have had two objectives: the short term, tactical aim was to create a six miles deep buffer zone along Israel's northern border. The strategic aim was to destroy the military power of the Palestine Liberation Organisation. The first failed because the buffer zone does not provide an effective answer in long range shellings or rocket attacks of Israeli territory. The second failed because the conventional frontal attack gave the Palestinian fighters time to retreat ahead of the advancing column.

Instead of having destroyed the power of the PLO, Israel has to negotiate indirectly with Mr. Yasser Arafat for a Palestinian ceasefire. The occupation of south Lebanon has brought the PLO back to centre stage, the last thing the Israeli Government wanted.

What is even more worrying

to the public in Israel, are the reports of tens of thousands of refugees fleeing northwards deeper into Lebanon, and the destruction wrought in many villages of south Lebanon has shocked many people.

It is clear that the Government did not give enough thought to what would happen once it had invaded south Lebanon. No real consideration appears to have been paid to how to withdraw, and who would fill the vacuum once the Israeli troops had gone. The Government does not seem to have taken account of the possibility of a U.N. force moving in. In effect Mr. Begin has brought about a situation which no one in Israel is happy about.

High point of popularity

It was Mr. Begin's first war as Prime Minister, and a dirty little war it turned out to be. Mr. Golda Meir was forced to resign as Prime Minister after the Government's mishandling of the 1973 war. Last year the Labour Party paid the delayed price for that war and for the squabbling between ministers in Mr. Yitzhak Rabin's Labour Government. From a high point of popularity only a few months ago, Mr. Begin now appears to be headed down the same road, less than ten months after assuming office.

Sending Mr. Weizman to Cairo was the gamble of a desperate man, striving to rescue a deteriorating situation. It appears to be fully to send a minister on such a mission when Israel is offering nothing new. But Mr. Begin believes that the only logical explanation for Mr. Sadat's visit to Jerusalem in November was that the Egyptian leader desperately needed peace, at virtually any price.

In the unlikely event of Mr. Begin proving right, he will have not only have renewed his position and his Cabinet, but may even have set the Middle East on the road to peace, since if Egypt makes a separate peace Israel will have neutralised its most powerful enemy. That would make an Arab military victory in any new round of fighting even less probable than it already is.

But if his bid fails to break the deadlock in the peace negotiations, then Mr. Begin will come under increasing pressure to step down. The pressure will come not only from the Carter Administration and the West in general, but from within Israel. The Israelis are tired of wars and most will find it hard to forgive a man who has thrown away the best chance of peace which Israel has ever been offered. Few want to retreat any further into a state of

MEN AND MATTERS

Rotary holds tight

Rotary International remains a bastion of male exclusiveness but, in these days of "equal rights, might this not be about to change? The question was raised yesterday by a report from Los Angeles that the Duarte suburb's branch of the Rotary Club is to appeal to the California Superior Court against its expulsion from the U.S. Rotary Club.

The expulsion was for accepting three women as members. When I asked John Jackson, Secretary of Rotary International in Britain, about this, he said that the expulsion had been because the branch had broken the provisions of the constitution — though he added that the breach had been the admission of women: had something to do with the extreme measure taken by the Rotary movement.

As a voluntary, non-profit organisation, Rotary is exempt from the provisions of the British Sex Discrimination Act of 1975. Jackson told me that women had been formally excluded from the Rotary movement since at least 1922. Last year Rotary's Council of Legislation, meeting in San Francisco had overwhelmingly rejected three motions to allow women to join.

Jackson, who had been there in the audience had cheered at the defeat of these motions. It had been a "high level of debate, without acrimony," he told me, with the clenching argument apparently being that women had their own comparable organisations. Scroopists, Altrusa International, Zonta and the Association of Business and Professional Women's Clubs were among those he listed. And when could Rotary reconsider its position? Not before



the next Council of Legislation. Feminists will not be pleased to hear that that is not due until 1980.

Travel tips

There must have been some heart searching among the entourage of President Carter before they set out on their four-nation goodwill tour this week. The booklet they were issued on the countries they would be visiting makes it seem that they would be dicing with disease or death every time they sip water or milk, munch an apple or crunch a lettuce leaf.

The booklet gives the most graphic accounts of life in Brazil, where Carter was yesterday, and unfortunately fell into local hands. The Brazilians were none too pleased with what they read. It was not just standards of food hygiene which were attacked but also the safety of life.

Rio de Janeiro was portrayed as a city swarming with rabid dogs and muggers. The last point may be true but Rio mug-

gers are all a good foot shorter than their American visitors. In any case, the Brazilians asked, who are the inhabitants of Washington and New York to criticise us on this point?

But the least delicate touch is perhaps that relating to security. Do not say anything confidential on the telephone, the Carter circuit is told, and beware of loose talk in your rooms unless these have been checked for bugs. "If this is goodwill, what is the alternative?" one Brazilian asked.

Nota non bene

So now we know why we found the surface area of the new pound note was only 81.9 per cent of the old one, whereas the masters of the Treasury claimed it was 83.5 per cent. Apparently the size as well as the value, alas, is a variable — and the Bank of England say that to some extent it will stay that way.

Several clearing banks have been complaining to the Bank that cashpoint pay-out machines have been caused to hiccup by the new note. But the result of unofficial talks between the Bank and the banks has been that the banks are going to try to clear up the problems at their end.

A spokesman of the Bank of England tells me that they will be putting some 800m. new notes in circulation in the 12 months from the recent "launch date" of February 9. He hopes they will not have to be folded so much by the public and thus will last longer than the ten months which the old notes averaged.

When I asked about the 3mm size variations in the new notes, reported by the banks, the spokesman told me that tolerances in the new notes were no different to those in the old ones. He added: "Precise size is not material to control not forgery and in any case don't

newspaper pages vary in size." Touche.

Express delivery

An embarrassed BP Board yesterday had to abandon its planned embargo until today on any Press coverage of the group's annual report. The GPO jumped the gun and delivered 2,000 copies to shareholders — including a number of surprised stockbrokers — ahead of the carefully planned March 31 release date. So now the Post Office could be receiving an unprecedented complaint — that it delivers too fast.

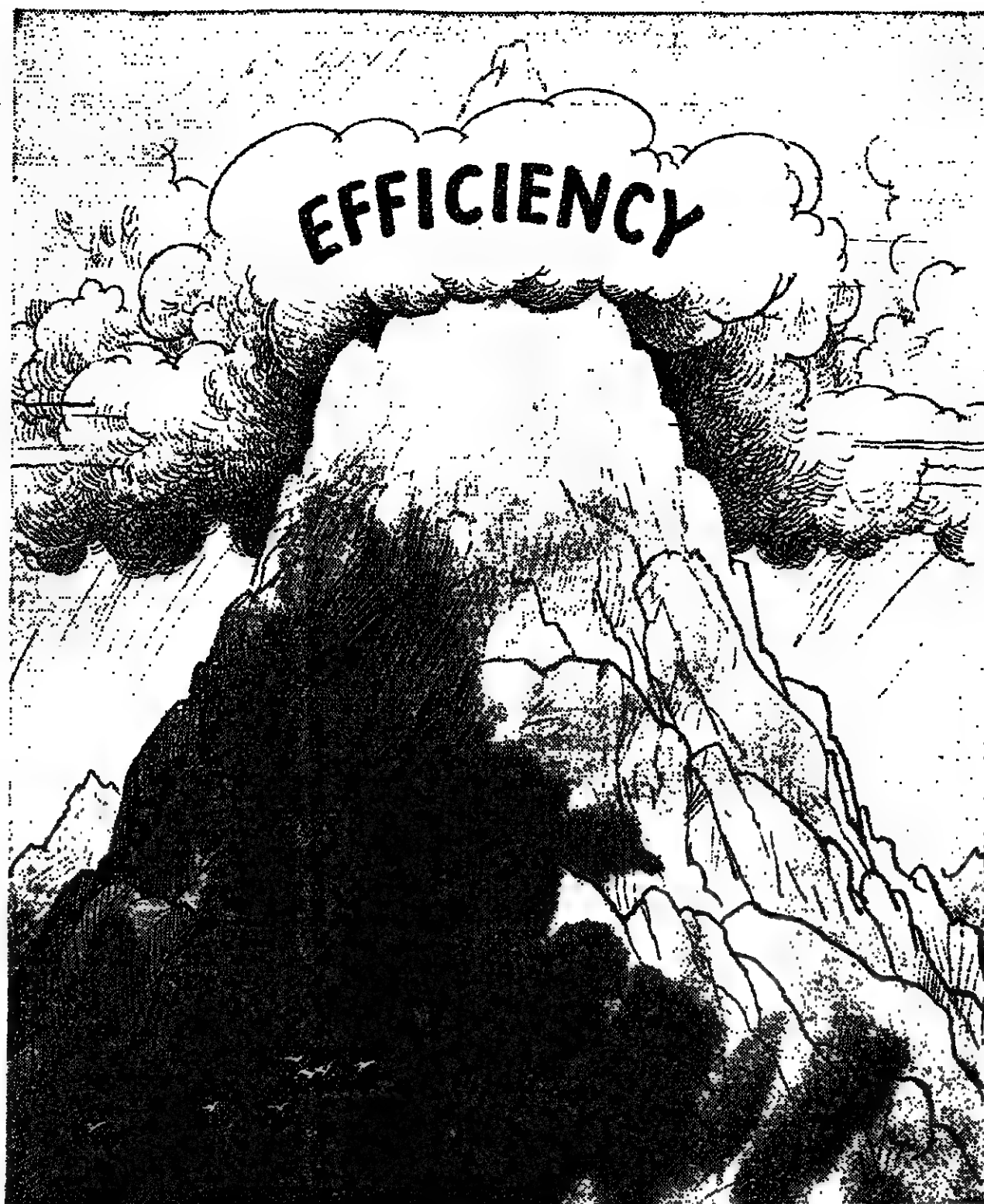
What could explain this over zealousness? Nothing to do, surely, with the presence on the BP Board of Mr. Tom Jackson, General Secretary of the Union of Post Office Workers.

Down to earth

A breathtaking technical advance is about to hit British agriculture: farmers can now measure how their grass is growing more accurately than by the age-old method of looking over the fence. Drawing on New Zealand expertise, the Milk Marketing Board's special Low Cost Productivity Services unit pooled its brain power with the Grassland Research Institute and Fisons of North Wyke to produce the Grassmeter.

This revolutionary device consists of a "horizontal plate which slides up and down a vertical rod through its centre." Some complicated instructions then follow: "The foot of the rod is placed on the ground and the plate is held up by the grass beneath." All you have to do is "make about 30 random readings in a paddock and calculate an average score for that area of grass." What do you say to that, Farmer Giles?

Observer



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The single terminal concept

New services from Reuters combine information from three separate data banks on one screen.

Reuters now offers two new and greatly extended services to the financial community on a specially designed terminal.

The new Reuter Monitor Commodities Service

On a single desk-top unit traders can now have a wider range of up-to-the-minute information on futures, physicals prices and contributed data, plus the option of The Reuter Monitor Commodities News and The Reuter Monitor Money Services.

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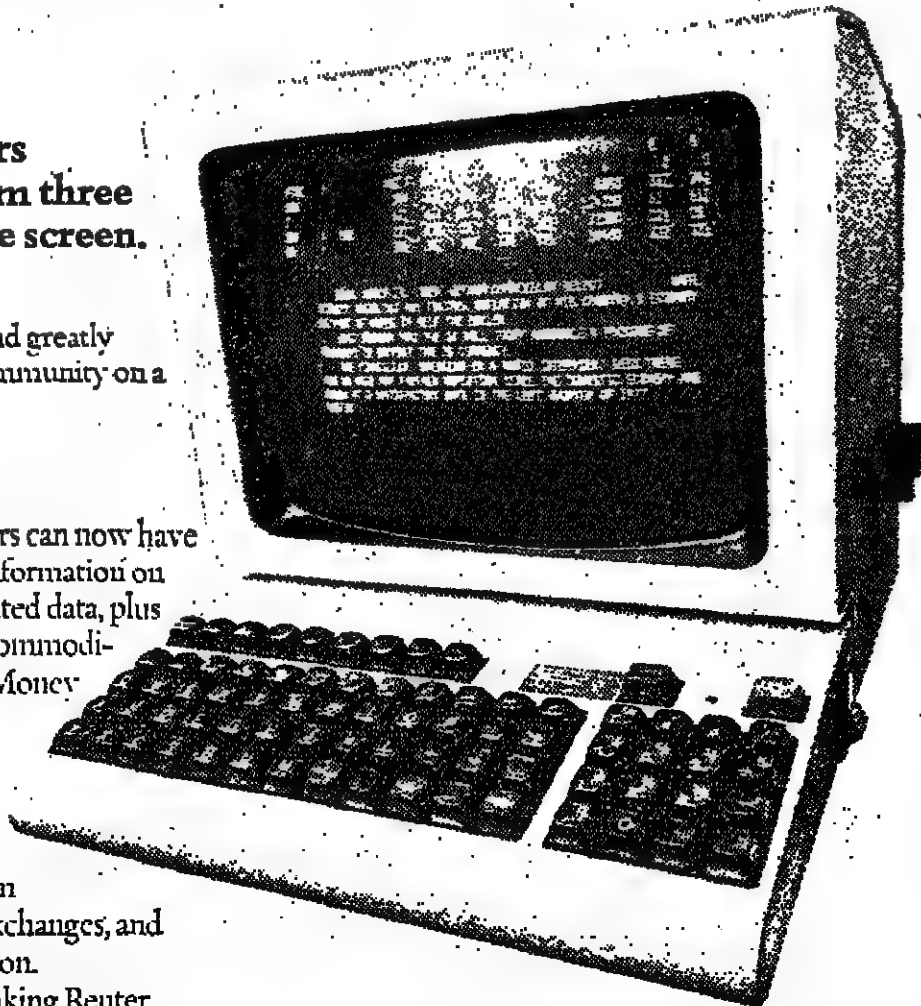
This is another multi-function service providing live quotations from the world's major stock and option exchanges, and market-maker contributed information.

Users also have the option of taking Reuter Monitor Bonds, Money Rates, Commodities or Reuters News Retrieval Services, all on one screen.

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This new terminal has a keyboard designed for simplicity of use. It incorporates 8 basic modes. The displays information in a flexible way, permitting transition from one format to another. The screen mode allows different types of data to be viewed simultaneously.

When the divisions between different markets



are becoming less distinct, the interchange of constantly updated information is more important than ever before. This is what the new Reuter Monitor Terminal is designed to supply.

For details, please contact Mr S. Herman at Reuters.

REUTERS

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COMMUNICATIONS II

Telephones ring the changes

IN THE next two to three years most telephone authorities throughout the world will have made the important step, from the traditional electro-mechanical exchanges to a new system of computer control.

In the developed countries this change has involved huge investments of typically around £100m. for research and development into competing systems.

All the largest telephone authorities including the giant AT and T in the U.S., the British, French, German and Japanese Post Offices, are committed to their own systems developed by their own manufacturers, though in France a decision has been taken to bring in the technology of Ericsson of Sweden alongside the purely French development of computer control.

In most of the rest of the world, the authorities will have to make a choice between the relatively few systems currently available for export. The main competitors are the AXE system developed by Ericsson of Sweden, the ESS range of exchanges from Western Electric the subsidiary of AT and T, the SPI from Northern Electric of Canada and EAX from American GTE, the DEX system from Japan, Metacenta from ITT, the EWS system from Siemens of West Germany and the French CIT-Alcatel's E10 system and the PRX system developed from private branch exchanges by Philips of Holland.

None of the British companies making telephone exchanges will have a system on the market until at least 1983, a year after the first of the British Post Office's System X exchanges are commissioned.

Vital

The British will therefore be too late to compete in the vital first round of tenders as authorities throughout the world make their first choice of system.

Several major contracts have already been awarded. Perhaps the most important from a technological point of view in 1977 was the decision by the Australian authorities to choose Ericsson's AXE system in preference to ITT's Metacenta. The choice was narrowed down from a wide range of tenders to these two companies, partly, no doubt, because they were both suppliers of electro-mechanical exchange equipment with factories in the country.

The Australian contract was seen as important partly because of the large size of the eventual order (about \$500m.) but also because of the very detailed technical assessment which the Australians made of the different systems on the market. Subsequently, an even bigger contract in Saudi Arabia was won jointly by Ericsson and Philips with Bell (Canada) as managers of the network. This was worth a total of \$3bn.

Ericsson was successful again in Brazil, where it already has a strong foothold, but lost to Siemens in the Philippines and did not tender against ITT, which won a large order for Metacenta in Korea.

Several large contracts are shortly coming up in the Middle East. In Iran, where GTE is struggling against great environmental difficulties, the American Bell International is said to have 600 consultants studying the problem. It is generally expected that GTE will obtain a further firm order for about 500,000 lines in the near future in addition to the 108,000 lines in its present contract. However, the Iranians are expected to require about 3m. lines in the next five years and a new contract could be open to the world's bidders late next year.

In Iraq tenders are expected this year for a 100,000 to 200,000 lines of computer controlled or Stored Program Control (SPC) exchanges. French and Japanese companies, which

already have a foothold in the country will almost certainly bid in competition with Ericsson, Siemens and American companies.

A similar sized contract for about 200,000 lines is expected to go to open tender in the United Arab Emirates this year. A tough fight between most of the world's major companies for this SPC system can be expected here too.

Substantial contracts can be expected in several other parts of the world in the next year or two. Colombia is expected to require some 220,000 lines, on which a decision will be made this year. There is talk of a big contract in Argentina for about 250,000 lines. A similar sized system will be required in Mexico, where ITT has installed about half the network, but Ericsson, which also has a subsidiary in the country, is expected to put up a strong fight for the acceptance of its own system.

The Venezuelans are also expected, in the industry to be making their decision in 1978-79. In that country, Ericsson has installed more than half the present system and has a manufacturing subsidiary there.

The award of most of these contracts will depend on a complex of political, commercial and technical considerations. Authorities naturally want the best available system at the cheapest possible price, but in many countries the provision of jobs is of almost equal importance, so that companies with local manufacturing plants may be preferred.

It is certain, however, that the struggle to gain a share of these markets over the next few years will be extremely keen, because the companies which gain acceptance of their own SPC system will be able to look forward to very substantial follow-on business over the next 10 to 15 years, and they may be able to exclude competitors completely from tendering for subsequent orders. The main reason for this is that all SPC systems are immensely complicated compared with the electro-mechanical exchanges which they supersede. For example, the manuals describing a traditional Crossbar exchange can be contained in between four and eight files which can easily be stored in each exchange for reference and maintenance purposes. Moreover, the exchanges made by different manufacturers are not wildly dissimilar, so that it is possible for maintenance engineers to understand more than one "brand."

He has already become familiar with transatlantic telephone conversations beamed upwards to a "stationary" satellite orbiting at the same angular speed as the earth and beamed downwards again suitably amplified to sound as though the speaker were in the room next door.

There is a host of satellites ferrying messages across the sky. But more important than simple messages for the ship or aircraft captain is the existence of advanced aids in space which can pin-point positions on the surface of the globe to within an accuracy of at least 50 metres—and a good deal less than that with advanced receiving equipment.

The earliest navigation satellites launched by the U.S. in the Transit series had one object in life—to enable Polaris submarine captains to know precisely where they were so their missiles could be launched accurately. The system was made available for commercial use in 1966, six years after the first Transit was lofted on high.

As well as the satellites' use in communication, they have been used for aiding in geological and oceanographic research.

In simple terms their main function is to transmit radio signals on very high frequency and ultra high frequency wavebands. The signals are transmitted continuously, with data on the time of transmission, the giving ground stations, ships or aircraft data on the satellite's precise orbital location.

Complex ground-based satellite navigation signal receivers with computer memories store data as satellites pass overhead. may see the system through to

The documentation for an SPC system, on the other hand, runs to perhaps 200 separate files, which can scarcely be stored in each exchange, let alone learned, understood and updated by engineers.

The complexity arises from the fact that SPC systems have replaced the electro-mechanical means of routing calls with computer programs. These programs do not only route calls, however. They are used for routine operations and maintenance and fault-finding, the charging of calls and a host of other inter-related tasks.

As Mr. Kjell Sandberg, an Ericsson engineer, put it: "The complexities are so great that trying to understand any single part of it will make you faint." Between 200,000 and 400,000 separate computer instructions are needed to program each exchange.

Practicable

To make the systems practicable, a large number of engineers' aids have to be built in, which are themselves computer-controlled. The AXE system, for example, has no fewer than 60 separate programs which are designed to make the engineers' task in handling the system easier.

Ericsson has also pioneered its well known "modular system" designed to ensure that an engineer working on one part of the system cannot rewrite a programme in such a way that it will accidentally alter the working of another part of the system. This possibility was one of the major disadvantages of earlier generations of SPC systems, including Ericsson's. An accumulation of accidental changes in the programmes could eventually cause the system to become unmanageable, and re-ordering of the programmes could then be a very expensive and skilled business.

Against these complexities, a telephone authority can set the very much greater flexibility of an SPC system, greater ease of installation and economies of maintenance. Since changes to an SPC network can be made by instructions from a computer terminal rather than by engineers with soldering irons, a large reduction in operating staff is also possible.

On the other hand, the skills required to keep the system running are of a comparatively high order, and include considerable programming expertise. For this reason it is

unlikely that any but the largest countries will want more than one or at most two separate systems in its network, and authorities will place a high premium on ease of maintenance.

That is why the current round of tendering is so vitally important to the world's manufacturers. For the same reason, the British Post Office's slowness in developing a stored program control system has put the two British manufacturers, GEC and Plessey at a crippling disadvantage which may continue for many years even after System X comes on to the world market. Many countries will have already made their choice before then. The position of Standard Telephones and Cables, ITT's U.S. subsidiary, is somewhat more equivocal. On the one hand, it had given its full backing to the development of System X (a necessity if it wishes to secure a part of the U.K.'s future market).

On the other hand, it could still have access to the Metacenta system or its replacement, if it finds eventually that System X fails to realise the exporting hopes which are now being pinned on it.

It is clear that to do well in exports, System X will have to provide features which are substantially better than those of the established competition. One such feature is the fully digital switch, which uses computer technology for the actual switching of conversations. Many SPC systems still use semi-mechanical switches controlled by a computer. However, the potential advantage to System X of being designed in a fully digital manner has probably been overstated.

Digital

American systems, and the French E10 exchanges are already fully digital, while Ericsson's AXE system has a digital option which is now in service in Sweden and is on order for several different parts of the world.

It is more likely that System X will be judged by its ease of handling by field engineers, by its success in reducing the daunting complexities of programming to easily manageable modules, and by its flexibility in working alongside old fashioned exchanges which will continue to exist in most telephone networks until well into the next century.

Max Wilkinson

A host of satellites

SAFETY AT sea and in the air will depend increasingly on communication with earth-orbiting satellites. These costly items of space hardware are no longer the exclusive province of military establishments as ship-owners and airlines, passengers and governments demand ever-greater navigational accuracy and as the military planners seek to justify their enormously expensive programmes with spin-off for the man in the street.

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By taking several "readings" of the transmitted signals, the receiver can be used to give its operator an even more accurate idea of where the satellite is at any given moment.

The greater the number of orbits from which the receiver takes information, the greater the accuracy with which the position of the satellite and the receiver can be determined. But many "cheap" receivers, costing less than £10,000, do not have the capability of giving readings to an accuracy of a few metres. For some applications this may not be a concern. But where the job is that of locating a drilling rig on an ocean oil-field, the expense simply cannot be spared if accuracies down to a few metres are essential.

The Transit network is now 18 years old. Many of the original satellites may have only a few years of useful life left, but earlier this year contracts were placed by the U.S. Administration for an improved version called the Nava satellite, which may see the system through to

CONTINUED ON NEXT PAGE

The world of communications has never been the same since the computer



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A member of the BP Group

Computers are no longer constrained to a centralised data processing role but with the advent of the mini and micro have breached horizons in the communications field that ten years ago could not have been imagined.

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COMMUNICATIONS III

Authorities exert their influence

PUBLIC telephone authorities worldwide have two major characteristics which are in contradiction to each other but which taken together act as the major determinants in the field of telecommunications—and, indeed, communications in its widest sense.

These are that public telephone authorities—known as PTTs, the standard abbreviation for postal, telegraph and telephone authorities—have an overwhelmingly dominant position nationally—that is, within their own borders—and almost no power internationally, because they cannot themselves organise, or have any powerful umbrella organisation which can organise, across national boundaries.

Naturally, this characteristic is shared with almost all public institutions: almost by definition, since these institutions are created to do a national job under the control or sponsorship of the State. However, it is worth stressing the point in this context partly because of the immense purchasing power of the PTTs, partly because of the effect they have on the technology of communications and on when that technology can come on stream, and partly because of the important position (though it is likely to be a latent one) domestic politics inevitably play in any such institution.

Most of all, however, it is worth stressing the point because the PTTs confront companies possessing characteristics

which are almost a mirror image of their own—i.e., they are comparatively weak domestically, but strongly organised on an international or transcontinental basis.

The symmetry is not quite as neat as all that. Yet it is the case that the major telecommunications manufacturers are large multi-national companies which are very often (but by no means always) dependent on the good offices of their domestic PTTs for their bread and butter, but which possess great flexibility in production techniques and in marketing because of their multi-national bases.

It is worth testing this very basic "contradiction matrix" against real examples to see how well it functions as a description of what is happening in telecommunications both nationally and internationally.

Take first an extreme case: Sweden. Sweden is extreme (or at least very unusual) both because its PTT follows a more than usually rigorous policy of buying internationally and because this relatively small country contains one of the world's major telecommunications companies, L. M. Ericsson.

In terms of telephone penetration, Sweden is second only to the U.S. Almost three out of four Swedes (by population not by household) have a phone of their own—in the capital, Stockholm, there are around 1.2 phones per person—an index of the efficiency of the Swedish PTT no doubt. But its policy of not depending on even so inter-

nationally reputable a company as Ericsson for its equipment—indeed, the Swedish PTT manufactures much of it on its own account—has meant that the company has had to regard the world as its market. (It would, in any case, have been forced to do so sooner or later by the relative smallness of the domestic market.)

Thus Sweden's PTT, together with its small size, has "produced" a telecommunications company which is immensely aggressive in foreign markets, especially in developing countries (where the largest contracts are now to be found). Naturally this combination of policy and geography has only "produced" the preconditions for success, or some of them. The company itself, and the skill of its engineers and other workers, has done the rest.

It has resulted in a company which has sales of more than 80 per cent. overseas (1976), more than 20 per cent better than ITT of the U.S., which was also—though for different reasons—forced into the overseas market, and around 15 per cent better than the Dutch company Philips, which also has a small home base (though Philips is significantly larger and probably has a closer relationship with its PTT).

The imperative to achieve

sales overseas, together with the added fact (which often sits uncomfortably with the first) that Sweden has among the highest labour costs in the world, has meant that Ericsson has concentrated strongly on high technology, and high quality, banking on the possibility that PTTs will often pay higher prices for the latest technology. So far the formula has worked well.

Within the last six months L. M. Ericsson has won a major contract in Australia, and has been part of the consortium (with Philips) which won the gigantic Saudi contract.

Standards

Thus it presents an almost too classic case of the general point made earlier—a company which is weak domestically and strong internationally, forced in part to be so by the policy of its own all-powerful (domestically) PTT. To test the proposition further, we might take a not altogether contra case, that of Britain, and examine it at somewhat greater length.

The British Post Office, the first institution of its kind in the world, has an all but complete monopoly on telecommunications. Its standards are widely agreed to be among the

highest in the world, and with a yearly budget for telecommunications development of around £1bn., or £3m. a day, it can keep three manufacturers fairly busy (the three being Plessey, GEC and STC, the British-based subsidiary of ITT).

Most equipment manufactured by these companies has to be approved at each step of its development by Post Office engineers. While some equipment—namely any private automatic branch exchanges (PABXs) with over 100 lines—can be sold direct to a customer, even then it must be exhaustively examined and approved by the Post Office before being put into service, and it must be maintained by Post Office engineers.

There are a number of additional characteristics inherent in British Post Office practice which should be noted in this context. First, it can provide its manufacturers with a comparatively large home base, and one which has been and still is, very sophisticated. Much of the European and U.S. trunk routing for example, is done via Britain. Secondly, its pride in its traditions, and its insistence on high quality custom-built equipment, has meant that it has known overseas, which is not had little (until recently) fully electronic in the sense

regard for how its purchasing commonly used.

(and thus the companies' manufacturing) policy would affect overseas sales. Thirdly, it tried to go "electronic" in the 1960s, failed, and is only now near to making another attempt—some time behind many European PTTs and many years behind the U.S.

In sum, then, Britain has a highly monopolistic PTT insisting on high quality custom-built equipment which operates a network still either semi-electronic or electro-mechanical. For all three of the companies which supply the corporation with its equipment it is the major customer by far. That means that their telecommunications output will be dominated by the Post Office's requirements which are for new semi-electronic exchanges and for replacement of electro-mechanical equipment. Thus to get Post Office contracts, that is what Plessey, GEC and STC must make.

Demanding

They are not, of course, doing so at a loss. But it does mean that at a time when export markets are demanding fully electronic exchanges, the British companies can only offer the old-fashioned, though naturally, TXEA, or the Pentax as it is known overseas, which is not fully electronic in the sense

There has been a recent example of how this state of affairs is working against the U.K. companies. Emirtel, the PTT for the United Arab Emirates, announced last month its plans for investment over the next five years. One of the major elements in these is the decision to switch from the Plessey-made Pentex exchanges to a fully electronic system; the contract for the electronic exchanges is currently out to tender. For Plessey it means that a small but nevertheless important market has almost certainly drastically contracted.

Again, the Saudi contract last year showed that the British companies—Plessey, BICC and Cable and Wireless—were all involved—could only climb aboard major international contracts on the coat-tails of much larger companies. In this case the Plessey TXEA exchanges were to be used as rural exchanges, while the Western (which led the consortium) ESS exchanges would provide the bulk of the switching in the cities.

The new Post Office management seems prepared to hustle along the development of System X as the new fully electronic all-British system is presently known—and to allow its suppliers to cut corners previously thought uncouth. But on the most optimistic esti-

mates there will not be commercial production of System X before 1982-83, by which time further developments in the Ericsson AXE, the Philips PRX or the ITT Metaconta exchanges (to mention only the most competitive on the European scene) may have outstripped the new U.K. technology.

Having made a pessimistic reading of the situation, however, it is necessary to add that while the particular relationship between the Post Office and its three suppliers has helped "produce" a comparatively uncompetitive telecommunications industry, the entire burden of the blame cannot be laid simply at the door of the corporation. The companies were and are free to turn down Post Office contracts in favour of export-oriented telecommunications manufacture—though naturally, and especially now, the competition is ferocious and the risks immense.

Yet in opting for security the U.K. companies may have relegated themselves to a more or less permanent second league position in world tables, and may have made it possible that one at least of them will be forced out of telecommunications equipment manufacture in the near future.

John Lloyd



A Multifone 'Pagephone' being used by a British Airways passenger service assistant at Manchester Airport.

Satellites

CONTINUED FROM PREVIOUS PAGE

the end of the century.

By then, however, a new and vastly improved navigation and position information system is likely to be in operation. Called Navstar, this also has its origins in military strategy, for one aim of the U.S. Air Force and U.S. Navy, sponsors of the programme, is to create a satellite based navigation system capable of providing any moving ship, aircraft, cruise missile or even vehicle of its position on a continuous basis.

The complete system is unlikely to be fully operational before the mid-1980s, but there are certain to be commercial applications, as the military authorities respond to a genuine need for highly accurate navigation in shipping lanes and in the air. The military potential of the system will be safeguarded through the use of signals which will be coded and proof from interference from jamming. The public will have access to a simpler signal.

In the more conventional world of radar, there has been intensive study over recent years of the potential for accidents in the world's busiest shipping lane, the English Channel. Here, a mass of research has been carried out by the British and French Governments.

The object has been to reduce the risks of major collisions. Britain's National Maritime Institute is working along two main lines. It has already studied historic radar information and documented data relating to casualties and navigational incidents. Now it plans to continue research of traffic flow in the Channel, using time lapse radar film and periodic traffic surveys, with ship identification. In June last year this included a full-scale Channel survey in conjunction with the Institute de Recherche des Transports.

This French body has carried out research into ways in which ships can be identified at night, using low-level cameras and shore-based searchlights. One novel solu-

tion may involve the automatic data processing of photographs of a radar display, although it is by no means certain that these could be interpreted instantly for identification purposes.

Much of this work followed the Anglo-French publication in February, 1974, of a report describing the Service d'Information et de Surveillance de la Navigation en Manche and the Channel Navigation Information Service. The report gave proposals for the development of radar surveillance and information services for Channel shipping.

For the shipowner these reports and the continuing studies on improving safety in the Channel have already had important implications. On the English coast expansion and improvement of the radar installations following the Anglo-French Safety of Navigation Group report of 1974 was completed on August 18, 1976, when two new 20 kilowatt radars, one at Dungeness and the other at St. Margaret's Bay, replaced the small experimental radar previously used.

A continuous photographic record of the radar displays is maintained by the National Maritime Institute.

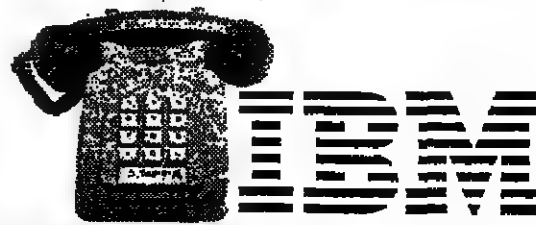
In France the Service d'Information et de Surveillance de la Navigation en Manche has extended its operations centre and installed a form of computer-aided data processing. This provides a synthetic display of radar input. A computer allows automatic detection and tracking of radar echoes from vessels contravening the traffic separation scheme operated in the Channel.

In addition, a very high frequency (VHF) direction finder has been installed. This enables ships using their VHF ship-to-shore radios for conversations to be identified with the corresponding echoes on the radar display. It is likely to be of great value where a ship in difficulties is unsure of its position.

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COMMUNICATIONS IV

Strains on the manufacturers



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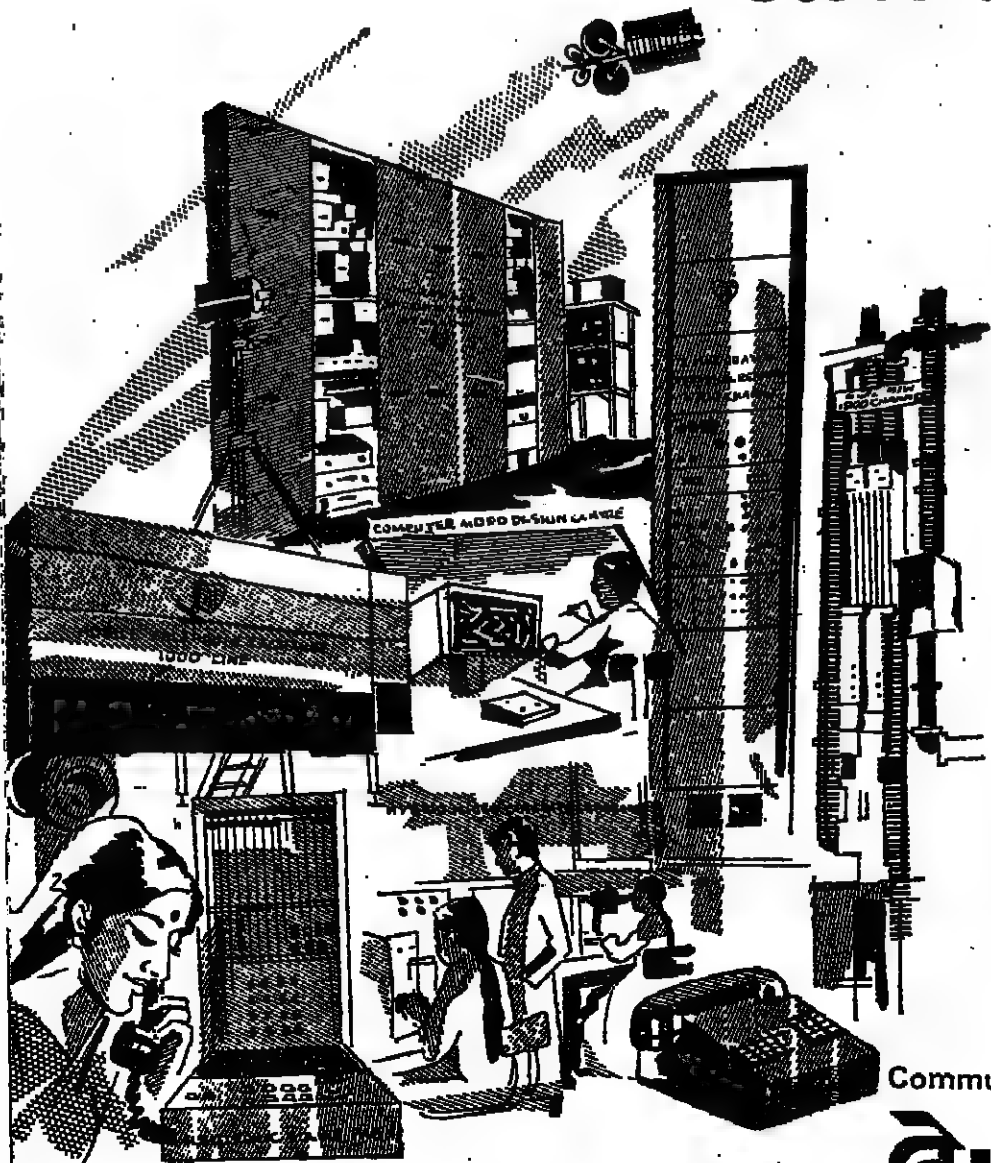
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ITT's BELGIAN subsidiary, Bell — a confusing name, with nothing to do with American Bell — has its major manufacturing base at Geel, near Antwerp. The factory is ultra-modern, long and low, covering a large expanse of ground. In the reception area the Metacanta 10c, ITT's new fully electronic exchange, is displayed, together with some rather more venerable equipment.

The surprise is that, once inside the factory proper, on the busy workshop floor, the exhibition in reception is to some extent paralleled. The Geel factory manufactures three types of switching equipment, representing three different stages of technological advance: two kinds of electro-mechanical switches, and one electronic (the Metacanta). The production of the electro-mechanical switchgear takes up much more space and requires much more labour than the electronic equipment. It is much larger and its production can be much less fully automated. Yet the company is obliged to carry on producing it far into the future if it is to meet present contracts and win new ones.

This state of affairs is one with which most major telecommunication manufacturers are familiar, although the ITT plant in the above example shows it in a particularly graphic form. It is that while developments in switching technology have been leaping ahead over the past decade, the investment in previous technologies — electro-mechanical, in the main, with some semi-electronic — has been so vast, and will cost so much to replace, that the replacement market in these technologies will continue to take much of the output of the manufacturers for years ahead.

The dimensions of the problem go beyond what most other manufacturers must cope with. An automobile company, for example, must, it is true, continue to supply spares for ranges of cars long since out of production: but these spares are a minor and sharply decreasing part of the company output. They are also unlikely to be fundamentally different from the components for its present ranges of models. But telecommunication companies must often give over the bulk of their production to old technologies, while at the same time tooling up for the production of advanced equipment for which there may not yet be much demand. In development terms they must face both ways at once, forward and back. Naturally, this places a considerable strain upon their capital requirements at any given juncture, and gives a particularly sharp edge to the competition in new markets.

Crossbar

The technology of telecommunications has been electro-mechanical for decades, based on the Strowger (or step-by-step) or crossbar switch. There was, however, a gradual evolution away from distributed control (as in the Strowger system) towards common control even before the advent of electronic processors. Their widespread availability completed and accelerated the trend, and meant in addition that the number of facilities which could be offered to the customer greatly increased. The harnessing of the computer to the exchange meant that switching decisions were made centrally, much faster, and that much greater attention had to be paid to software — the writings of programmes — than ever before.

One of the major effects of this development, both for the manufacturers and for their major customers, the PTTs, is that fewer engineers can both make and maintain exchanges. The harsher consequences of that effect have not been felt generally, in part because the new technology is at an early stage of introduction, in part because growth in the telecommunications market still compensates for it. But it will not remain so for long.

This, then, is the working environment of the manufacturers. They are of course under constant pressure to modernise and to innovate, both to offer better equipment to their customers and to save on labour costs. But because they work in such a public environment — most supply Government, or quasi-Government agencies — their decisions cannot merely be market ones.

What, then, are the major companies which chose to remain (or are allowed to remain) in this difficult market? First, in importance and size, are the two American companies, Western Electric (a subsidiary of AT and T) and ITT, the archetypal (or unique, depending on how you view it) multinational; then comes the German company Siemens, the

Swedish company L. M. Ericsson, American GTE, then Japanese manufacturers, Hitachi and NEC.

The British company GEC is next in rank, then Dutch Philips, Northern Electric, the British Plessey, the French Thomson-CSF, the German AEG and the French CGE.

These companies have been listed in order of size of turnover; but it should be noted that many of them have interests outside telecommunications, some of them with their major interests elsewhere — as GEC and Hitachi, for example. Those whose major or total output is in telecommunications — the two U.S. companies and L. M. Ericsson, for example, and to a lesser extent Philips — naturally have a great deal to gain and lose from the vagaries of the world market: they also tend to be the major innovators and the leaders in technique and technology.

The two U.S. companies present interesting cases, both because they are so large and because they are strongly contrasting. For reasons discussed elsewhere in this Survey, Bell and Western Electric have between them a virtual monopoly on the supply and manufacture of telecommunication equipment of all kinds in the massive U.S. market. Western is now the largest manufacturer of its type in the world, with more of its ESS electronic exchanges in operation than all the electronic exchanges of its competitors put together. Until recently, Western Electric had no extra-U.S. presence for the excellent reason that it did not need one.

ITT, however, was barred from the market by the Bell monopoly: it thus went elsewhere for its markets, notably (at first) Latin America, then Europe, and now, increasingly, the developing countries of Africa and the Middle East and Far East. Over 60 per cent. of ITT's total manufacturing turnover is abroad, and that includes most of its telecommunications manufacture. Thus one giant

has grown large in domestic operations, the other in foreign operations. That state of affairs, however, seems likely to change.

Most of the other manufacturers do not provide such extremes. With the exception of Ericsson (discussed elsewhere), the companies operate both in a home base and abroad, with the domestic environment traditionally providing the basic turnover and the export market the adventure.

This strategy has entailed the companies forming exceedingly close links with their own PTTs, frequently acting as R and D annexes for these authorities, or having the authorities do the same for them. It has also meant that the PTTs' ordering policies determined to a considerable degree what the companies could offer in the export markets, a field in which the authority can be more or less helpful.

Joint

Philips, for example, recently made a joint announcement with the Dutch PTT on the installation of the 500,000th SPC (stored programme control) telephone line in the Dutch telephone network. The announcement was made the occasion of an international Press conference. To U.K.-conditioned ways of thinking, it was puzzling that the Dutch authorities should have shared the announcement with Philips: the British Post Office tends to keep its manufacturers rather severely in the background. But neither the Dutch company nor the PTT saw anything in the least unusual in using the line's installation as a boost for Philips' SPC system — the PRN — in exceptionally tough markets.

To balance this, it should be noted that both the British Government and the British Post Office were involved in trying to woo the Saudi contract — unsuccessfully, as it turned out — in the Anglo-American consor-

tium which had been formed to bid for it. Even traditionally stand-offish authorities, like the British and the Germans, have entered the market, impelled by the knowledge that if they do not, their own suppliers' viability may be threatened.

The future for the companies looks, if not bleak, then uncertain. All the larger ones are faced with this fact that while they now have greater capacity than ever before, because of the new technology — and thus must win orders at a higher rate than before if they are to maintain even current levels of employment, they are facing domestic markets which are often quite near to saturation or where further growth at the present high rates is limited. They are thus all forced to compete in markets where there are no domestic suppliers, and these markets are becoming very rough indeed.

What this will mean will vary enormously from company to company. For Western and ITT, there is no doubt that it will mean a series of mammoth encounters over similarly mammoth contracts, with much entertaining mud-slinging on both sides failing wholly to disguise the desperate nature of the battle. For large diversified companies like Siemens and GEC, it may mean a relative decline in the importance of their telecommunications businesses. For companies wholly or largely dependent on telecommunications manufacture — L. M. Ericsson, Plessey, Thomson-CSF — the future can only hold an unceasing effort to offer more sophisticated equipment and facilities than their competitors. For the emerging Japanese companies, like NEC, present practice seems to point to low-cost operations in developing countries. The common factor is that all will need their wits about them and that, while at any given juncture the winner may take all, all cannot be winners. The grisly book on which will be the losers is already open.

John Lloyd

Improving the service

IN A very recent report on "Convergence" by the Butler Cox Foundation of London, it was pointed out that if a number of large European companies were to band together and buy and operate a communications satellite to link 50 of their offices and sites in various countries, they could do themselves a power of good.

Based on current charges for a satellite and its launcher, and pessimistic assumptions about the extent to which the message carrying capacity of the "space exchange" would be used, the operators would profit handsomely.

Butler Cox predicts a vast reduction in communications charges. An example is a call from Britain to Germany where the basic unit of charge is three pence. This buys a user five seconds. For the same price, the satellite user would get 300 seconds of time or 60 times as much. In the reverse direction, since German charges are much higher, the satellite would show an even greater advantage.

Of course, this is reducing the problem to its simplest elements, not that a group of companies would not be able to put up the £5m. or so required, but the public telephone authorities of the various countries involved would be most unlikely to grant permission. At the same time, there would have to be standby capacity in the form of a dormant satellite and through existing landlines for the times (rare) when satellite communications suffer problems.

Nevertheless, it appears that too many companies take communications costs for granted though these are frequently much higher than computing charges. When close scrutiny of what it costs a company to keep in constant touch with its branches and overseas operations becomes a matter of routine there may be a great deal more pressure on PTTs generally to provide services at the lowest possible cost.

This, then, is one of the major considerations that telecommunication authorities must have in mind at all times as they investigate methods of improving internal and external services. Many of the European

systems suffered severely from wartime and post-war stringencies and a number, including the British one, developed some extremely ingenious ways of getting a quart into a pint pot.

In other words, by using a technique called PCM, or pulsed code modulation, it was found possible to carry several conversations simultaneously where only one was carried before. This is done by sampling the analogue sound pattern at high speeds, and using the values found to describe a particular outgoing pattern as a series of peaks rather than a continuous wave.

Interleave

This makes it possible to interleave the signals from several conversations, decoding them at the end of the PCM line. With a sufficiently high sampling rate it is possible to go much further than telephony and provide, as AT and T demonstrated in the laboratory over ten years ago, TV channels as well as data transmission at high speeds.

In the autumn of 1976, the Post Office decided to take the plunge — after investigations lasting some 18 months — and order from GEC Telecommunications and from STC seven systems based on this technique, each capable of carrying 1,680 telephone calls simultaneously, or a TV signal, on standard 4.4 mm. coaxial cable. This was the first step towards linking all-electronic exchanges to be set up all over Britain by the late 1980s.

Signals from 56 PCM equipments of 30 channels each are combined into a stream running at 120m. tiny signals (binary digits — or a form of Morse code) per second.

Development work on this method of transmission started over 30 years ago in Britain at about the same time that Bell Laboratories started to look at the possibilities of guiding microwaves through long pipes as a form of carrier.

British radar successes

during the Second World War contributed greatly to the understanding of the problems of this difficult technology, but in the absence of suitable electronic components the work went into abeyance from 1959 to 1962. Another reason for the hold was that a coast to coast carrier in the U.S. of the size then thought feasible would have greatly exceeded the growth pattern of the Bell system.

But because of the unprecedented expansion of traffic in America the ideas were reactivated and a joint project set up to build an experimental line. This took advantage of the latest high power devices from the electronic component engineers and over 14 km. of test line was set up to show the ability of millimetric waves in a helical system to carry any form of communication with an error rate in the digits transmitted of less than one in ten million.

The aim was a long-line system able to support 475,000 two-way voice circuits or the equivalent in other media. More significant still is the fact that the cost per system-mile is expected to work out at less than other competing systems for a fully loaded network.

Matters have not stood still in Britain and about 18 months ago the Post Office disclosed plans for the installation of a 132 km. millimetric two-inch helical waveguide system between Bristol and Reading. BICC would make the equipment and the £5m. project would be up and working by 1982 with the ability to carry as many as 500,000 simultaneous calls.

In this area, BICC apparently has a lead over U.S. and Japan since it has been operating a full scale production plant for some time. But it will not take long for its competitors to move from the pilot stage if good business is offered.

The effort on waveguides was spurred partly by the fact that microwave radio systems fade considerably over the free space paths they travel through in carrying digital traffic. They have high immunity to distur-

CONTINUED ON NEXT PAGE

COMMUNICATIONS V

Competitive world markets

AROUND the time when ITT was becoming aware that it was unlikely to secure the Saudi Arabian telephone system—at 2bn. the biggest deal of its kind in the world—but long before ITT was willing to publicly concede defeat, a senior executive of ITT (Europe) was asked by a journalist how important the deal was, and what damage it would inflict on the corporation if it were lost.

The ITT official, who was 99 per cent. certain that the contract would not come the way of ITT, protested that it was almost certainly in the bag and that the opposition was running scared. However, to answer the question, the questioner should bear in mind that while deals like the Saudi one were terribly important, the markets of the developed world were actually such more lucrative. And further, he added, the kind of markets in which contracts were being won now—Saudi Arabia being a good case in point—were so fraught with difficulties that vast, turnkey contracts like the one under discussion were often literally more trouble than they were worth. While they had to be pursued in order to keep the order book full and the labour force occupied, there was no way of guaranteeing that the whole thing wasn't run at a loss and that the government for which you were working would not leave you with a raw deal.

The ITT man, who was being rather less than wholly forthcoming about the deal, was accurate enough about the rest.

Domestic European and American (and Japanese) markets are still the largest in the world, and still offer very large pickings. For example, while the 2bn. Saudi contract was a once-in-a-lifetime deal over five years, the British Post Office spends the same amount of money in two years on its ordinary programme of expansion and renewal.

Again, it is quite right to say that foreign markets offer endless scope for hazards: say, a gathering of telecommunications engineers from multinational companies will tend to

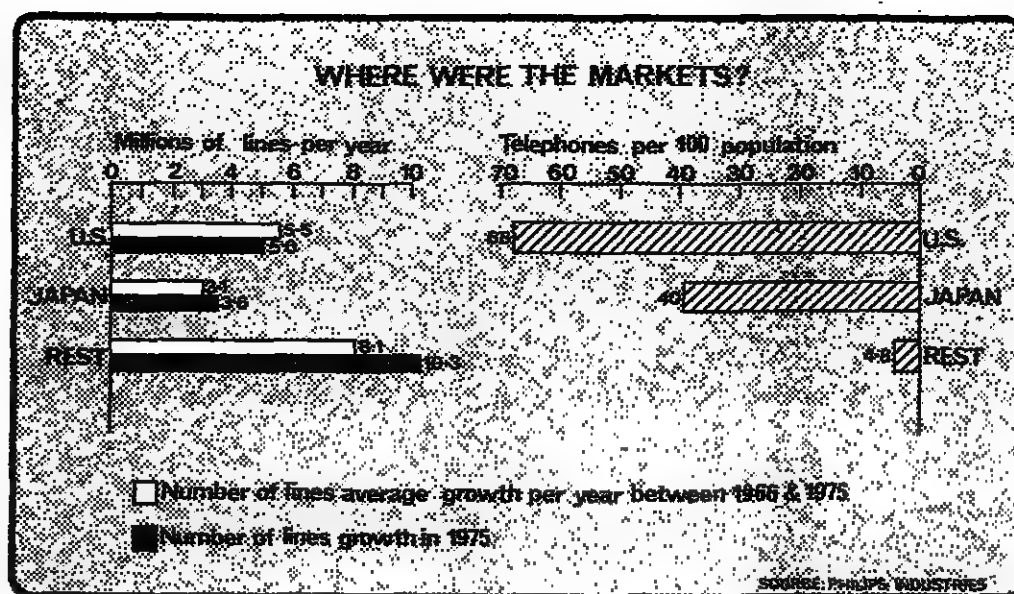
be heavy on the tales of nights spent in the bush while creatures unnamed and unknown dug up the newly-laid cable. At around the same time as it was losing the Saudi deal, ITT won a smaller contract—worth a few hundred million dollars—in South Korea, which would involve digging up much of the central area of Seoul. No one had much idea of how to work out the cost of doing so, an exercise which would inevitably depend heavily on a fairly detailed knowledge of South Korean property law.

So why, then, are the companies cutting each other's throats to get into the uncharted territories of the developing countries' markets? Quite simply because the markets of the advanced countries are either strongly protected for their domestic suppliers against foreign competition (U.S., Japan, U.K., France, Germany) or too small to offer much of a market anyway. After your own backyard, the developing world is about the only place to go.

First, it is necessary to get some idea of the size of the market place, and of its worth. There are something like 400m. telephone sets in the world, with over half of them in the U.S. (around 150m.) and Japan, with the rest of the world sharing very unequally, the remaining 200m. This represents an investment of more than £280bn. with a market (outside the U.S.) estimated in 1977 at around £18bn.

The accompanying charts show the market's growth. The dominant U.S. shows over 5 per cent. growth in the 10 years between 1966 and 1976, but the evidence is that that growth is slowing. Japan has overall lower growth, but increasing, while the rest of the world has higher growth (from a much smaller base), accelerating quite fast.

The second chart puts things into clearer perspective, showing both growth and the static position at the beginning of 1976. One can readily see that the bulk of those countries with high telephone penetration—U.S., Switzerland, Denmark, Canada, U.K.—tend to have compara-



tively low growth, while countries like Brazil, Mexico, and the USSR are obviously striving to catch up. Less obviously, France shows rapidly accelerating growth—an index of the large amounts laid aside by the French Government for telecommunications investment to attempt to modernise and extend the country's comparatively inefficient system. For the most part, however, it is the developing countries which are growing, the developed countries where growth tends to be slowing down.

Growing

It is the lure of these growing markets in the Third World which has led companies to join the very savage game of telecommunications exporting—that lure, coupled with the fact that domestic markets are beginning to show that they are finite. Nowhere is this more the case than in America.

America has traditionally been connected up by Bell, which monopolises city and inter-city telephony, leaving some 1,600 independent companies to pick up the 10 per cent. or so of work which remains. Bell, umbilically tied to its fellow AT&T subsidiary Western Electric, has guaran-

teed a massive market for Western's products, one which has meant that this, the largest telecommunications company in the world, has ignored the rest of that world while it very profitably served Bell.

But even vast markets have their limits. Nearly 80 per cent. of Americans have a telephone of their own, and Californians have more than one each (including the newly-born). The nation's capital, Washington, has 1.5 telephones per person, leaving Bell in the well-known but uncomfortable position of ice-cream vendor to Eskimos. There is, of course, a well-developed campaign which continues in the American media aimed at persuading the world's richest people to have telephones in rooms previously free of them: but that, too, has limits.

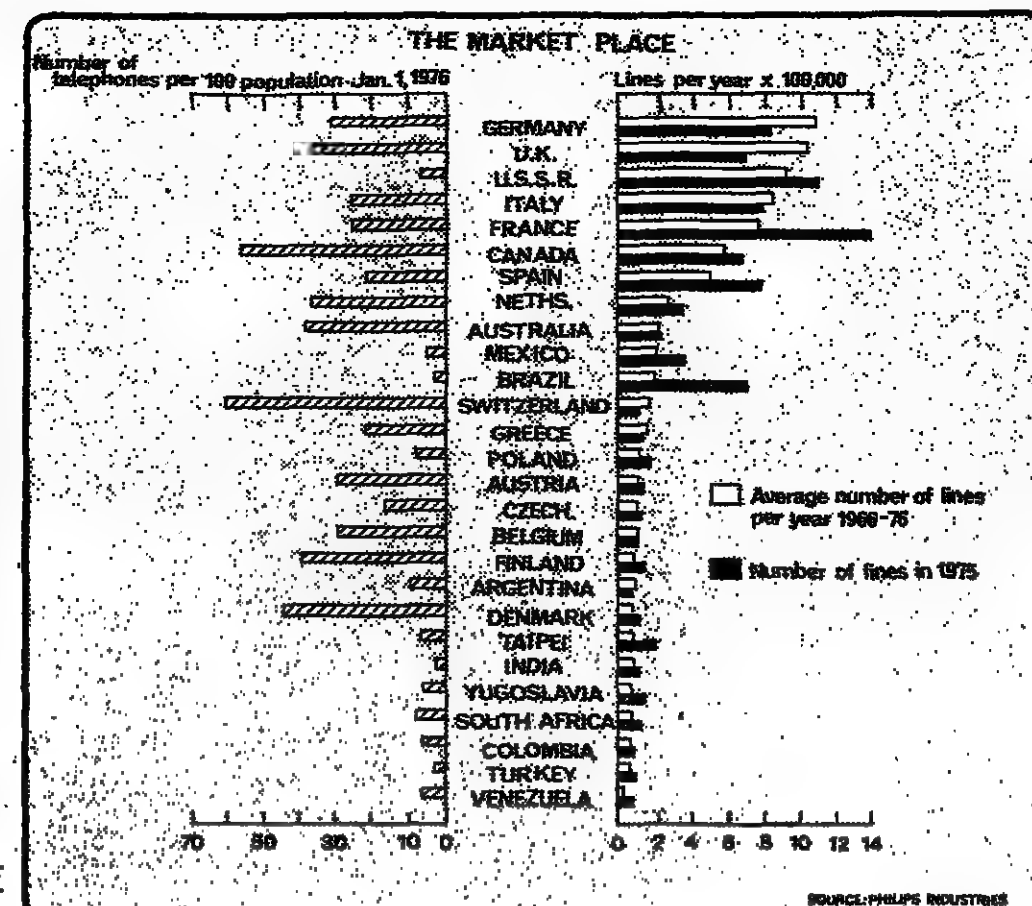
Western has been forced in recent years to look east, north and south as well as west in its search for profitable markets. Indeed, if it does not find some new frontiers rather quickly, it may begin to show signs of strain.

Its wholly unwelcome (to the other manufacturers) entry on to the world stage has meant that ITT, which had always regarded the world as its oyster bed, has a major new competitor. While the other companies have another American giant to

deal with. The customer—especially the PTIs of the developing world—will find themselves given more assiduously courted than before.

The major targets of these companies are the Middle and Far East (especially the former, because the oil-rich countries tend to order the most technologically advanced equipment irrespective of cost); Latin America, especially Brazil; Africa; and to a much lesser extent, the Soviet Union and Communist Europe. Sir William Barlow, chairman of the Post Office, said in the recent interview that the 1980s would be the decade of telecommunications expansion in the Third World: it may be that the expansion has already begun.

As for the domestic markets, those which still have plenty of growth left in them (as in the U.K.) seem unlikely to be opened up to the free flow of competition in the near future— if anything, the tendencies are protectionist. The bitter winds of competition overseas, which we have noted above, mean that companies will come to depend increasingly, like it or not, upon their home bases; their importance as employers will mean that Governments are unlikely to challenge their versions of what is good for them.



Service

CONTINUED FROM PREVIOUS PAGE

For inter-continental operations, nothing has caught the imagination of the man in the street more than communications satellites, simply because these have made it possible for him to see, on his own home TV, events such as the Mexico City Olympics or the first moon landing, as they took place. This, this could not have been achieved by any other means.

To say that space satellites will supersede undersea cables is wrong since the growth of international communications traffic is such that both systems are needed. At the same time

there is a limit to the satellites it is possible to have operating simultaneously over the equator, while they do not solve all transmission problems. Latterly strategic questions have crept into the background of the argument, particularly since the Soviet satellite crash in Canada.

Meanwhile the satellites are operating in the overcrowded bands below 10GHz and are not likely to start using those over 14.5 GHz till the 1980s, with Europe investigating 10.95/14.5 bands for its own satellite system.

In the last two years or so, communications systems that harness the potentially enormous message carrying capacity of laser beams has grown with the availability of improved small lasers to produce the modulated beams—again a spin-off from advances in electronic circuit technology.

High copper prices have also spurred work on the glass conductors which have demanded a very considerable and ongoing effort on the part of developers such as Corning and now Pilkington, to produce a thin glass rod in which the characteristics of the glass change as one moves from the core to the skin so that any light tends to be reflected back to the centre.

As many as 30 countries are building experimental systems with a world light cable market put at £100m. by 1980, rising to over £500m. a year by the mid-1980s.

An experimental system carrying 2,000 telephone conversations is installed between Hitchen and Stevenage in ordinary Post Office ducts using 7mm cable from STC. Belgium will have such a link in service as part of its ordinary network by October this year.

Ted Schoeters

CA.PA.BIL.I.TY: THE QUALITY OF BEING CAPABLE.

In the world as a whole, there are fewer than 10 telephones per hundred population. This compares with 50 or 60 telephones per hundred population in many industrialized countries.

The provision of basic telephone service is thus a very real need in many parts of the world.

Concurrently with this need, the technology of telecommunications is changing and becoming more sophisticated.

With the transition from electromechanical systems to electronic systems, telecommunications administration



Ericsson's AXE public telephone exchange switching system has been approved and selected by telephone administrations in Australia, Denmark, Finland, France, Kuwait, The Netherlands, Panama, Saudi Arabia, Spain, Sweden and Yugoslavia.

tions now have access to systems offering more and better facilities than ever before. As a result, new demands and new markets are opening up even in industrialized countries where the need for basic telephone service has already been largely met.

On the one hand, the new sophisticated technology offers tremendous advantages to both administrations and subscribers.

On the other hand are the huge investments involved and the pressures to keep costs at a minimum. There is also the fact that for developed countries existing equipment defines the technical, operational and financial environment into which new equipment is introduced.

For most administrations, however, the advantages of the new technology are such that the main dilemma is not whether to introduce it, but how to gain the fullest possible freedom to plan and control its rate of introduction and penetration into their networks.

System capability

Full awareness and understanding of the dilemmas and problems of administrations is a prime requirement for manufacturers.

Only then it is possible to market the right systems at the right time to give administrations the planning flexibility they need.

Ericsson's unique AXE switching system and the new DIAVOX family of telephone instruments and systems are two products developed in full awareness and anticipation of administrations' needs.

Among its many advantages, for example, AXE offers a choice of analogue or digital switches. It thus not only provides administrations with unequalled freedom in planning for maximum network economy, but also provides "future proofing".

In the new DIAVOX family, the modular design approach not only ensures minimization of total cost, but also makes provision for the addition of future technical developments.

"Supersystem" capability

With the transition in telecommunications technology, new skills have to be built up.

Long-term commitments on the part of suppliers, always important, have become even more vital. Particularly in countries still at a comparatively early stage in the build-up of their telecommunications systems.

The transfer of technology, knowhow and skills has become as important as part of long-term customer relationships as the selling of the hardware itself. Local manufacturing also becomes an important consideration.

This means interworking with customers not only at the system level, but at the "supersystem" level as well.

It means the willingness and capacity to take part in network planning, system interwork, operation and maintenance procedures, staff planning, economic analysis and administrative procedures and, not infrequently where long-term capital may be tied up for extended periods of time, participation in investment planning.



DIAVOX—DBA 100—is more than a new telephone. It is a complete new approach to telephones. More than 400,000 have been ordered by Saudi Arabia along with AXE switching system.

It means installing and commissioning support and planning support for future development.

It means comprehensive training capabilities, complete documentation, and in general readily available technical support.

It means advanced research and development facilities designed to meet or anticipate the growing needs of customers around the world.

Not least important, it means keeping to delivery schedules.

Doing it the hard way

At Ericsson, we've developed our system and "supersystem" capabilities the hard way.

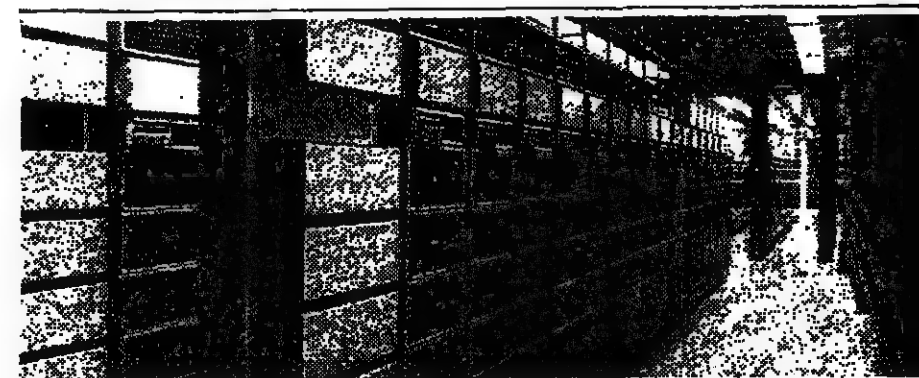
No diversification.

No conglomeration.

But a lot of hard work and attention to detail specializing in what we know best... the telecommunications business.

As a result, we are today one of the world's major telecommunications manufacturing groups with more than 70,000 people worldwide, some 70 factories in 15 countries, operations in more than 100 countries and annual sales in 1977 exceeding 880 million pounds.

We're also one of the few—very few—organizations with the across-the-board capacity, knowhow and experience to design, manufacture and install complete telecommunications and telecommunications-related packages virtually anywhere in the world.



ARM transit exchange, Mollison International Switching Centre, London. The ARM first stage of the Thames International Switching Centre, London, is scheduled to go into service this year, with the AXE system second stage scheduled to go into service in 1979. A significant part of the equipment for these exchanges was manufactured in Thorn-Ericsson's plant at Scunthorpe, South Humberside.

For details, write to: Thorn-Ericsson Telecommunications Ltd., Horsham, Sussex, RH13 5QF or group world headquarters, Telefon AB LM Ericsson, S-126 25 Stockholm, Sweden.



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COMMUNICATIONS VI

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Saudi Arabia makes telecommunications history

The Government of the Kingdom of Saudi Arabia recently awarded the Philips-Ericsson-Bell Canada Consortium a contract for, what is believed to be, the largest telecommunications project in history.

Within a period of three years the present automatic telephone network will be increased in capacity by 476 000 lines, and extended throughout the kingdom.

Philips, who share equal responsibility with Ericsson for equipment supply and installation, will deliver 56 stored-program controlled PRX switching systems for local exchanges

(of which 13 will be containerised) as well as all PCM equipment for the junction routes in the multi-exchange areas. Bell Canada will be responsible for system operation and maintenance for a period of five years.

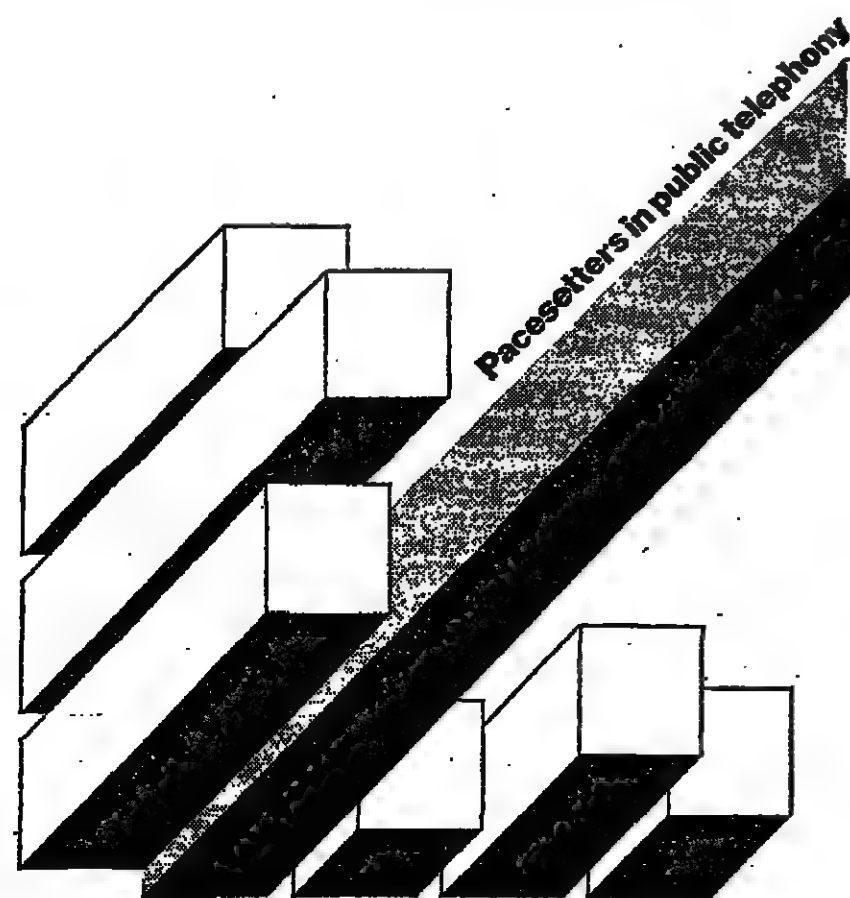
The logistics of this turnkey project, which has a total value of over U.S.\$3 billion, are prodigious. During construction more than 1000 employees and their families will be accommodated in model villages built specially for the project. No less than 200,000 cubic metres of materials and equipment by 1983 has about 400,000 are in the U.K. This Project figure shows, as Holman Hunt pointed out recently, that terminals will become as common as telephones and not solely because of their use with computers by any means.

Other joint responsibilities of the Consortium include the training of up to 800 local PTT staff on the operational, maintenance and servicing aspects of the computerised network. This will be carried out in specially equipped schools and repair centres.

An important part of the Government's second five-year plan, whose aims include diversification, industrialisation and the rapid development of education and social services, this ambitious project will firmly establish the Kingdom of Saudi Arabia at the forefront of modern telephone communications.

Philips are proud to help set the pace

Philips Telecommunications
Hilversum, Netherlands



Philips
Telecommunications



PHILIPS

Opportunities in aviation

WITH CLOSE to 25,000 civil aerodromes throughout the world (including the Soviet Union), and with over 650m. passengers a year being carried on scheduled air services, it is clear that aeronautical communications is not only one of the vital, but also one of the biggest, aspects of the communications industry worldwide.

It is also one of the most complex, for it involves not only the problem of voice communication between the ground and the many thousands of civil aircraft of all sizes in the air around the globe at any one time, but also the constant transfer of information to and from those aircraft concerning their current positions, their flight paths, and their immediate intentions.

The one factor governing all civil aviation communications is that of safety. By ensuring that not only the pilots, but also the air traffic controllers on the ground, know exactly where any given aircraft is at any moment in time, and where it is going, the primary requirement for aviation safety can be established. Thereafter, by a process of continuous monitoring, it is possible to continue to guarantee that safety at least to within reasonable limits.

For this reason, after the provision of aircraft and airports themselves, the biggest single volume of money that is spent in worldwide civil aviation is spent on communications of all kinds—in the provision of radar to help air traffic controllers pinpoint the position of aircraft in the sky, of ground-based radio navigation aids such as beacons en route to enable pilots virtually to pick their way through the sky, and of instrument landing systems to enable them to arrive over the runway thresholds secure in the knowledge that they are not going to find other aircraft in the way.

The list of specialist requirements for aeronautical communications is endless. It includes the provision of aircraft-to-aircraft and aircraft-to-ground voice communications, both en route and in the increasingly congested areas around the approaches to major inter-

national airports. It includes also the provision of an instantaneous international telecommunications network between passengers a year being carried on scheduled air services, it is clear that aeronautical communications is not only one of the vital, but also one of the biggest, aspects of the communications industry worldwide.

It is difficult to fix with precision the amount of money that is spent annually on providing all these aspects of aviation communications, but it is not likely to be less than £1bn., and this figure is increasing steadily, both as a result of inflation and the growth of civil aviation itself. With an average annual growth rate in passenger traffic of not less than 8 per cent. forecast through to the mid-1980s, the demand for communications equipment of all kinds is bound to continue to expand.

Traffic

This has given rise to a problem that is causing some concern to the world's aviation authorities—especially those with smaller budgets to spend on this area. This is that the continuing increases in traffic are approaching the point where many States can no longer afford the large sums required either to introduce the new facilities, necessary, or to maintain at an adequate level those facilities they already have, so as to ensure the necessary high standards of safety.

This, in turn, is placing a considerable burden on the financial resources of the International Civil Aviation Organisation (the aviation technical agency of the United Nations), to ensure that worldwide a uniform standard of communications, and hence also safety is maintained, and it is likely that some of the more highly-developed aeronautical States in future will have to subscribe more cash than at present to ensure that those standards are maintained. For example, an airliner leaving the comparatively highly-developed 'Aeronautical communications' area of North America and Western Europe is entitled to expect that on approaching an area such as

the Middle East, South-East Asia, or Africa, the same standards of communications capability will prevail—that the navigational aids in terms of radars and radio communications will at least be adequate to ensure a safe arrival at the planned destination airport.

In order to achieve this, the ICAO itself regularly produces what is called an "Air Navigation Plan" for each of nine major aviation regions of the world, which sets out what it considers to be the minimum necessary requirements for safe and orderly air navigation within the region concerned. The requirements take the form of "recommendations"—the ICAO is not in any position to instruct—and the overall aim is to ensure that individual States, in financing and implementing their own civil aviation development plans, adopt systems that will dovetail with those of adjoining States in the same region, and with those in regions adjoining it. Each of these Air Navigation Plans contains recommendations for the installation of radars, instrument landing systems, voice communications and other systems sufficient to enable civil aviation to be continued without unnecessary disruption. Each Plan is regularly updated, both in the light of the progress made by individual countries in meeting the earlier suggested developments, as well as in the light of improved techniques emerging from the manufacturers of the various types of equipment.

One of the biggest problems, of course, lies in the different rates of implementation of these Plans. It is not uncommon within any given region to find one State ahead of another in introducing, say, Instrument Landing Systems, and even within any given State a marked difference can often be found in the standards of equipment between one airport and another.

The governing factor is, of course, money, and there is no way in which the ICAO can force any State to spend more than it chooses or can afford on the provision of navigation and other aids for greater aviation safety. The result inevitably is that in some parts of the world the rate of progress in improving aviation communications is much slower than in others, and that there are some airports where organisations such as the International Federation of Air Line Pilots' Associations regard as sub-standard to the point of being hazardous, the worst of them rating the IFALPA "Black Star". This is more than just a publicity factor—in the countries concerned the individual local pilots' associations are able to bring considerable pressures on their governments to bring the standards of a given airport up to an acceptable international level.

Direct

Probably the biggest single new development in aviation communications—interpreting this to include the provision of navigation information as well as direct voice communications—lies in the impending introduction of Microwave Landing Systems (MLS) for the 1980s and beyond. In its simplest terms, this means the provision of a new type of aid that will supplement and eventually replace the current Instrument Landing System whereby an airliner in flight can be guided from the ground down to a safe landing in all weather conditions by night as well as by day. The current types of ILS that are available are restricted in the number of aircraft they can cope with at any one time, and the function of the proposed new MLS is to increase the volume of traffic that can be accommodated with safety in the final stages of the approach to landing so that runway utilisation can be increased. At present, the All-Weather Operations Panel of the ICAO is studying two broad types of MLS—the British-proposed Doppler system, and the U.S.-proposed Time Reference Scanning Beam system. Each side tends to argue that its own development is the best for the future, and the ICAO panel will have a difficult task in choosing between them this spring.

The struggle between the rival systems has been intense, and sometimes even acrimonious, and is not yet over, with comparative trials of both still in progress at various major airports throughout the world. It can be—and is—argued that at a time when many airports throughout the world still do not even have present-day types of Instrument Landing Systems, it is almost academic to even begin to consider which type of system should replace them for the rest of this century. But the counter-argument is that it is never too early to start thinking about methods of improving aviation safety through better navigational and landing aids, especially at a time of expanding aircraft traffic, and while it is accepted that with MLS (whichever system is chosen) will become increasingly available through the 1980s, there will continue to be side-by-side a continued demand for ILS especially at smaller airports which do not have the volume of traffic to justify MLS.

Michael Donne
Aerospaces Correspondent

CONTINUED ON
NEXT PAGE

International networks

FORECASTS and surveys are useful in indicating a trend and most industrialists would absorb several of them, add their own private information plus a large grain of salt, and then take action.

But so far as terminal use is concerned, there can be no doubt about the explosive growth rate, since in two short years the predicted figure for Europe by 1983 has about trebled to 2m, of which 400,000 are in the U.K. This Project figure shows, as Holman Hunt pointed out recently, that terminals will become as common as telephones and not solely because of their use with computers by any means.

This predicted growth in terminal populations presupposes a parallel growth in international networks such as Euro-net, which at the start of 1977 will be available to provide access across Europe to vast amounts of information in various scientific centres. It will also allow major interconnections between high street shops and local bank networks so that customers can pay for their weekly shopping by magnetic card. It takes into account the growth of Swift—the international banking transfer network—and of the many transatlantic services from bureaux and databanks in America.

Battleground

But in that country, at the present time, battle lines are being drawn on two fronts and the strategies to be used, and the outcome of what could be fierce warfare, will undoubtedly affect Europe.

The first battleground is in data transmission with a threatened fight promised between the existing packet-switched networks typified by Telenet, the entrenched might of AT and T which holds 80 per cent of public telephone traffic, and Satellite Business Systems backed by IBM.

Packet-switching, invented in Britain at the NPL by Davies, is a means of transferring large amounts of data across available lines at high speeds, keeping line traffic close to optimum. The "packets" are messages

with a guiding head code. It is already estimated that if private users could use such services in Europe for messages rather than their being limited to conversations with a databank computer, communications rates one-tenth of those of telex would result.

SBS is proposing to provide, by 1983, a service covering 48 of the American states operating through one or two satellites in geostationary orbit above the equator in the South Atlantic and 375 ground stations. This service will provide total communications—data, voice, facsimile and video. It may, for instance, be used between a number of computer sites serving a large multinational group to give a quantum jump improvement in information handling.

Existing satellite service providers such as RCA have made a number of protests and the Federal Communications Commission has intervened to place a number of trammels on SBS (IBM) but there seems to be no doubt that experimental transmissions will go ahead as and when IBM decides and that the programme will progress to the set timescale, which includes an experiment to be up and working in a year or so.

AT and T did not believe in packet switching when it first appeared on the scene but is now planning its own super packet service. Bell Data Network (BDN) which will be launched next year and provide several levels of service between message transit times of 0.2 seconds and four hours. The shortest times are equivalent to Telenet and Datapac (Canada) as well as Euronet (Europe). The longer times indicate storage and this is exactly what BDN proposes to do—but also to process some of the data being transmitted in ways other than simply reading the head code to achieve the proper routing of the message. And there's the rub.

Theoretically IBM should not become involved in common carrier work. Neither should "Ma Bell" become involved in computing. Is it surprising therefore that analysts, including Frederic G. Withington of

Arthur D. Little and Charles P. Lecht, Advanced Computer Techniques, predicted at the DataComm conference in early March that the two giants would have a major clash, but that U.S. legislators did not realise its significance?

By 1983 close on 80 per cent of all computers installed will have some form of communication facility. If SBS creamed off all or a good part of this traffic for its satellites, AT and T would stand to lose vast sums in terms of line plant outpiped or under employed—as much as \$200m, one speaker said. It should be remembered that IBM

CONTINUED ON
NEXT PAGE

Microprocessor controlled dot matrix teleprinters

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COMMUNICATIONS VII

Teletext being put to the test

TELETEXT, WHICH here means both broadcast and interactive varieties, both Ceefax,acle and Viewdata, plus their French, German and other equivalents, presents at this early stage of its development a number of commercially interesting questions to equipment suppliers and information suppliers alike. Many organisations (of which the Financial Times in partnership with Exchange Telegraph is one, through a new joint subsidiary called Fintel Limited) are being real money, in the form of people and prototypes, that teletext will take off somehow, somewhere. But how fast, for what uses, is still intensely debated.

The questions cut across the spectrum from pure technology to social habits. Only when Viewdata enters first its market (and subsequently its public service, in June this year and January 1979 respectively (God bless the Post Office willing), will evidence begin to accumulate about the likely answers. Meanwhile, the number of organisations taking at least a defensive interest in Viewdata (over 100 have already signed up as information suppliers) bears impressive witness to the challenge, or threat, expected to be posed by the new medium.

1—Is teletext intrinsically a 1g thing, or not? Is it the next evolution after colour TV, as big as the invention of printing itself? Or is it just another rather expensive toy?

2—Will teletext be accepted by the broad consumer/domestic market, and if so, in which variety? Or will the business user be the first to bite? In other words, are we talking of millions, perhaps with a few expenditure per person/terminal, or the thousands, with perhaps a high expenditure per person/terminal?

3—Will Ceefax and Oracle, controlled by the broadcasting organisations, remain a limited service of a few hundred pages each, sitting, as it were, at the margin of teletext development or will Viewdata, with its theoretically unlimited capacity, provides the great bulk? In other words, will Ceefax and Oracle just be a "trailer" for the general idea of teletext, of using the TV set as a domestic and office terminal, with Viewdata as the main attraction? Or, in the contrary, will people want running up telephone bills (Viewdata being a system for connecting the TV set to the Post Office computers via the telephone) and make Viewdata a flop, paying the way, one day at least, for a big expansion in the broadcast teletext services, perhaps on dedicated TV channels?

4—What will all this do to demand for TV sets, in particular, TV sets with the necessary teletext decoders? British manufacturers are held by many people to be slow to recognise the potential market for adapted TV sets: such critics

believe that shortage of sets, rather than lack of public enthusiasm, may be the major constraint on Viewdata and general teletext usage in the early years. If true, will that, yet again, open the door to the Japanese?

5—Is Viewdata itself, as a technical system, resilient enough? Are the telephone lines free enough of interference: does the system "crash" too often: do the sets "go on the blink" too often: is telephone dialling reliable enough — to provide an easy-to-use general public service?

6—Is the indexing of material on Viewdata — a complex tree structure in which, some fear, the average person will get lost in the wood — a deterrent to broad public acceptance?

7—And will people pay for information when the charge for it is displayed (as it will be on Viewdata) in front of their eyes? Or will it be just the business user, accustomed to paying for information already as a commercial tool, who accepts this as part of life?

8—What will the role of advertising be on teletext systems? Indeed, what is the definition of advertising in this new context? As far as Viewdata is concerned, all the information providers (to use the jargon) will be paying the Post Office to put information on the Post Office computer (or, in due course and at a cost, on the computers as they begin to dot the country), and the big corporation that, for example, pays to put an advertisement in the Financial Times, could on Viewdata just as easily "rent" space itself to display its message. Whether there will be grounds for surcharging such corporations for appearing, not on their own but within and alongside of the information provided by another party, like a professional publisher, remains to be seen.

9—Also on advertising, the question of whether there should be a code to govern whatever is deemed as advertising on Viewdata, and if so who should administer it, is under discussion. Given the ease with which material can be deleted or amended (virtually instantaneously) and the sheer volume of material that may be on the system, it could be impossible to keep track of it in the way that ITV does, by formal vetting before showing.

10—Will teletext be left in the hands of its present organisers? Or will it one day be hived off, perhaps as a unified but separate service?

11—Will people read text at all on a (slightly flickering) TV screen?

The future of teletext, as of the idea of the domestic all-purpose video-terminal and the general business terminal,

bristles with these and a host of other questions, although an encouraging feature is the optimism with which, by and large, a wide variety of people are tackling these questions. There are, however, those who regard the whole teletext phenomenon as yet another example of Great Britain being sidetracked into some idiosyncratic development by its engineers, when the rest of the world is treading a different path.

Viewdata has of course been sold, as a system, abroad, notably to Germany, and teletext as a general phenomenon seems certain of some application in all countries with TV networks. The question raised by some is, however, whether the main thrust of database development in this country (since Viewdata is essentially a database, held on Post Office computers, for limited or general access) should be directed at this system: or whether it is once again the U.S. which points to the proper path to take.

There, partly because of certain anti-trust rulings affecting the telephone system, there is no direct equivalent to Viewdata. But there has been a substantial development of the database market, in which some companies specialise in the creation and origination of an electronic database (for example the New York Times Information Bank), while others (for example Lockheed) specialise in their distribution.

These American databases (some bibliographic, in that they index and abstract journals and other publications in specified fields: some economic, in that they store financial and economic information; some business; some legal: some general) are now extending their sales and marketing to Europe. In general, the tendency is for a distributor to carry as many separate databases as possible, to maximise revenues, and for a given terminal to be able to "tune in" to many different distribution networks. This tendency has however a long way to go yet, and many systems (for example, the American Lexis system, a legal database) still operate with dedicated terminals.

But the important thing is that there is a fast rate of commercial growth predicted for this type of electronic information system, which will benefit at least those that already hold information in some electronic form (for example, for computer type-setting: for those that do not, it must be admitted, the economics of this type of business are more complicated. With the development of Euronet as a European "data highway" to be the equivalent of such U.S. data highways as Telenet and Tymnet, the business of shunting information around Europe, indeed round the world, for eventual reading on some common, all-purpose terminal,

comes one step nearer. But what connection, if any, there will be between the TV set-terminal and the general purpose Video Display Terminal, and indeed between the sets of information available to them, remains to be seen.

But it is undoubtedly the business world which is feeling for at least evaluating the impact of these new systems at present. This is true both in market-making areas, where VDT-based systems supply rapid price information and may indeed provide the actual market-place for transactions in stocks or commodities (see, for example, the development of the Reuters Monitor or its new challenger in Europe, the AP-Dow Teletext system); and in the area of corporate information, where large companies with substantial needs for, and staffs to cope with, information of all kinds pertaining to the company, its customers and its market place, have been in the forefront in evaluating or indeed sponsoring the development of electronic databases.

Ambiguity

For at the heart of the unlovely vocabulary spawned by modern electronic information systems—words and phrases like "information systems," "data and database," "store and forward," "input and access"—lies the deep ambiguity about the meaning of the word "communications" itself. It can signify both the vehicle for transmitting the information—the line, even the train—and the information so transmitted and the meaningfulness, or otherwise, of that information to the person who gets it.

At its best, however, modern technology is trying to provide the answer to the dilemma that it has itself posed. Having been responsible, in part at least, for the massive information explosion from which the Western world, and particularly the business and scientific world, is suffering, it can now provide the selective search techniques and highly tailored information services that can, in principle, enhance the effectiveness of the individual businessman or professional while freeing him from intellectual indigestion. Here, if anywhere, lies the social and commercial rationale for the development of database services, of which teletext in its Viewdata form is at the moment the prime U.K. example.

In answer to that elegant poser—Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information? Where is the information we have lost in the filing cabinet?—, electronic storage and search may provide not indeed the wisdom but certainly the information and possibly the knowledge.

Rex Winsbury

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Whose choice of 2-way radio would you respect most?

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How long would you expect your 2-way radio to last?

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Behind this somewhat emotional outburst lies the cold fact that most European countries have shown themselves to be more concerned with the rights of the individual to data privacy than America has, so far, largely because of the latter's putting free enterprise before everything.

But Canada has already made it clear that it has strong objections to the amount of information on industry and commerce flowing into and out of U.S. databanks. And, one could ask, why stop at industry and commerce?

The US authorities have a few more months in which to make clear what their attitude will be to the control of trans-national data and whether U.S. databank operations will be required to respect privacy laws applied in other countries, even when the latter happen to be "pocket handkerchief sized."

It is already difficult in Britain to converse with a computer which persists in sending wrong bills or unwanted literature. How much more difficult is it going to be to get wrong or illegal information held in a databank in Florida corrected or deleted?

Ted Schoeters

What type of vehicle would you wish to equip?

Chief tank/bulldozer/farm tractor/truck/Mini/limousine. (Oh, go on, say "tank"! If your 2-way radio is rugged enough for that (and Pye's equipment is), it'll take anything. And Pye Beavers—which are simply weatherised versions of our famous Olympic sets—have served faultlessly at -30°C and +60°C, which is 10°F. So, even if you propose armoured manoeuvres in Greenland or the Sahara, whatever the vehicle, Pye fits.)

Assuming you had 2-way radio now, how would you feel about a massive service organisation behind it?

Impressed/glad/safe/reassured/worried. (Pye, whose service organisation is the only massive one, point out that, if it worries you, you're probably also frightened by hospitals. Service back-up in Pye's view, is vital. There are 250,000 2-way radios in the U.K. 180,000 of them are serviced by 500 Pye engineers with 250 Pye vehicles in 24 Pye locations—which also do installations of 2-way radio. So everything's near, which means quicker, which means cheaper.)

What should you do about an aerial site for your 2-way radio system?

Clear some ground/reinforce a roof/buy a hill/duplicate the P.O. Tower/ask your wife/chicken out. (Don't do the last. Any problem is probably easily solved. Years ago, Pye—recognising the potential value of Britain's old Roman beacons—arranged transmitter/receiver sites accordingly. Now Pye's own facilities serve legions of Pye customers, none of whom have had to worry about frequency allocation, planning permission, signal coverage area and paper work. That's our job.)

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International

CONTINUED FROM PREVIOUS PAGE

has a developed computerised PABX that has been launched in Europe but not the U.S.

AT and T is not waiting for its goose to be cooked and is working on what analysts have called the ACS, or advanced communications system, that would do much of the work on data transmitted over a network that is now done in the main computer or its communications processor.

This is a fascinating subject but speculation on the outcome is complicated by the U.S. Government's anti-trust action against IBM and barely veiled threats of similar action against AT and T.

What of Britain, where packet switching was conceived? It may be a grossly unfair thing to reveal, but in my files on data transmission studies there is a document produced at the Post Office's behest and containing the results of investigations into demands from the U.K. computing fraternity for a data network separate from the public telephone network printed back to front—and that is not lateral thinking!

PO resisted demands for this network, dillied with packet switching, dallied with store and forward solutions, and allowed France to progress so quickly with its own Transpac network that when the choice was made of the system for Europe, neither of the U.K. solutions was selected. Logica of the U.K. and SEMS of

France, working with Philips, were outright winners about a year ago in the bid to set up Euronet, principally because their proposed system was designed on the basis of Transpac, with ability to become a public service.

The Lescau/Ferranti proposal was based on the EPSS (experimental packet-switched system) set up primarily around British Steel's requirements with PO blessing. A third contestant included Plessey.

Significant is the fact that Transpac/Euronet conforms with X25, a "translator" or interface which allows outside users access to a switched network adopted as standard by CCITT, the European telecommunications standards body.

EPSS did not conform at the appropriate time. Also, IBM has offered an adaptor which allows its equipment operating under the company's preferred telecommunications regime to communicate with Transpac systems. The inference is clear.

Euronet charges have recently been fixed by the PO and there has been some surprise that they are not distance dependent and will not be, even when the network becomes public. There is a volume charge and a weighting for duration.

Logica and its partners have just won the coveted Eurodata study of the future of communications systems in Europe. The two year study may require an expenditure of about £1m.

But since the requirement is a forecast till 1987 meeting the call for a unification of the whole European system starting in 1990, the sum is not exaggerated.

Logica's Philip Hughes sees no real problem in using a European satellite system as a means of expanding traffic capacities within the area.

The real problem could arise if SBS extended its services to Europe and absorbed lucrative traffic before European-controlled systems were ready. IBM will soon use satellite links between the U.S. and Europe as a matter of routine.

Opinions vary as to how many will use Euronet from Britain. Transpac leaders have no qualms. They forecast 1,500 links in the first year of service (1979) rising to 120,000 in France by 1985. This clearly refers to packet switching used preferentially as a means of channelling data.

Transpac also suggests something the P.O. may not like—a guarantee of line quality and data accuracy carrying a penalty to be paid to users if the guarantee is not met.

Meanwhile, overshadowing all the foregoing is the question of national frontiers which is so acute that it has led a former official of the White House Office of Telecommunications to say that many of the countries resisting or blocking the export of information from U.S. data banks are not concerned with

competition in a literal sense. "They are resisting what they call electronic colonisation... they do not want their lives to be Americanised, Anglicised or Sovietised..."

Behind this somewhat emotional outburst lies the cold fact that most European countries have shown themselves to be more concerned with the rights of the individual to data privacy than America has, so far, largely because of the latter's putting free enterprise before everything.

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Ted Schoeters



COMMUNICATIONS VIII

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Advances with mobile radio

ONE OF the more encouraging success stories in the U.K. telecommunications industry generally rather dismal performance over the last few years has been the development of military radio and communications equipment.

The Clansman project funded by the Ministry of Defence and carried out jointly by Racal, Plessey and Marconi Space and Defence Systems (the GEC subsidiary) produced the world's first really modern family of front line portable radio sets. Its designers had to solve, in a sophisticated modern context, the problems first encountered by the Russian army during its ill-fated attempt to invade Prussia in 1914. Then, the Russian advance was too rapid to allow the inefficient telephone engineers to maintain links between the field units and headquarters. So the Russian commanders had to resort to

radio communications, and because not enough field operators were trained in cryptography, they communicated in ordinary Russian. These broadcasts were naturally intercepted by the Germans, who inflicted crushing and humiliating defeats upon the invaders.

Nowadays, when troops are much more mobile, and are in addition using sophisticated electronically controlled weapons, the need for rapid and secure communications is even more paramount. Furthermore, the speed of a modern battle makes it impracticable to expect soldiers in the field to decode messages. They must be able to speak directly to their commanders as the ill-fated Russians did in 1914. Modern radios solve this problem by making the machine do the encoding and decoding, so that although the soldiers are communicating as if by an ordinary telephone,

the signals which go out over the air would be a series of bleeps unintelligible to an enemy even if he were equipped with a powerful computer.

The details of how Clansman achieves this are, not surprisingly, a secret. However, it is known that the transmission is digital, which means the voice is encoded as a series of very rapid Morse code-like bleeps. Once the voice is changed into digital code it is possible to further scramble the signal with a variety of encryption techniques.

Multiply

One possible method, for example, is to multiply two very large prime numbers and use their product as the key to the code. It has been demonstrated that even with the help of a computer an enemy which intercepted the code number could

not deduce the two original factors which would be used for encryption. Even if he could deduce it, the knowledge would be of no avail because the encryption codes can be changed very rapidly—many times a second—by modern integrated circuit technology.

When it was first introduced, digital transmission had the further advantage that it could not easily be detected. To an ordinary receiver, the transmissions sounded only like a low hiss, probably indistinguishable from background noise.

However, all military advances tend to be followed rapidly by counter measures; and the technology which conceived digital transmission is now well able to detect it. An enemy which hears a transmission can infer damage even if he cannot decipher the signal. Either he can direct a missile to home on to the signal, or he can send out a jamming beam to disrupt the communication.

For these reasons, the Clansman system, which has been the basis for a booming export performance by the U.K. firms which developed it, will itself be superseded. Most advanced countries are now starting to develop a new generation of mobile military radios which will be immune from present counter measures. The system most generally favoured at present is "frequency hopping" by which the signal is sent out not merely in a constantly changing code, but at continuously varying frequencies.

The message is divided into small "packets," each between a hundredth and a thousandth of a second long, depending on the system. Each packet is concluded by a coded signal to the receiver to change to a new frequency, which it does automatically. The main advantage is that an enemy is most unlikely to pick up a small burst of transmission lasting less than a hundredth of a second on any one waveband, and even if the signal were detected, it would be very difficult to follow through its rapid changes of frequency without enormous computing power. Moreover, if an enemy tried to jam the signal, he would have to spray a barrage of "noise" on to the airwaves which would inevitably

interfere with the communications of his own troops.

A further possible advantage is that, if the frequency changes are sufficiently fast, a considerable number of different communications channels could be interleaved on the same broad spectrum of frequencies without significantly interfering with one another. Whether this technique could have an advantage in civil communications has yet to be determined.

Certainly, digital transmission does have advantages in civilian context and it is already used, for example in paging systems. The main point is that, since digital transmission sounds only like a low hiss to the ordinary ear, it is much less likely to interfere with a conventional broadcast. Furthermore, digital transmissions can be multiplexed onto the same carrier frequency band, so that several conversations can be broadcast simultaneously, but they would be coded in such a way that each receiver would hear only the channel destined for itself.

In the field of military radio, the spin-off from developing the most advanced systems is of a different sort. Many developing nations, while recognising the vital importance of good radio links, do not require the sophisticated equipment which is being developed for the American or European arena. Racal, particularly, has built its phenomenal success on supplying this market with products which it developed from the know-how gained in the Clansman project.

Milestone

However, the next milestone in military radio development is neither more ambitious, nor centres on the development by the U.S. Department of Defense of a new series of tactical radios, probably based on the "frequency hopping" idea, which is scheduled for introduction by 1984, and which the U.S. at least would like to see as a standard throughout Nato. Tenders for the first development contract are now being assessed from four competitors: ITT, and three Anglo-American consortia. They are Racal with RCA, Plessey with GTE-Sylvania and Marconi with Cinnemat Electronics. This tender is for a "slow hop" system in which frequencies change several hundred times a

second. A second development contract for a "fast hop" radio in which frequencies change several thousand times a second is being competed for by Marconi with Cinnemat and Plessey linked with Collins, a Rockwell International subsidiary.

Similar developments are already under way in Germany, France and Holland to perfect an anti-jamming radio suitable for the battlefields of the 1990s.

On the civilian front, demand for mobile radio sets has been growing steadily, and it is forecast that by the year 2000, some 2m to 2.5m sets could be in operation in the U.K. This is based on the conservative estimate of a steady 10 per cent. growth, but represents a tenfold increase on the number of mobile radios in current operation.

The main problem posed by such an expansion is of frequency congestion. The 1979 world conference on the allocation of frequencies may therefore have an important bearing on the extent to which the appetite for private and business radio communications are allowed to develop.

A rumour has already developed in the sale of VHF two-way radios for yachtsmen which are increasingly being seen as essential equipment in today's congested waters. Improved battery technology and the universal installation of marine motors, even in sailing yachts have combined with a steady fall in radio set prices, to make the general installation of radios seem feasible. The cheapest seem now retail at a little over £200.

There is, in addition, a growing lobby in favour of the allocation of citizens' band frequencies for use by private motorists and hobbyists. The fall in price of CB radios to a critical point, at which they became a truly consumer item, triggered an enormous craze in the U.S., which appears now to be tailing off. There again, the limiting factor has been the congestion of the airwaves which resulted when thousands of CB radios could be operating simultaneously in a given area. So in spite of pressure from manufacturers and potential groups of users, there is no immediate sign that CB will be allowed in the U.K.

M.W.

Telephone needs better image

HARRODS WILL sell you a telephone from £47 to £425—not just one of the conventional handsets which have little changed in years but an antique phone on its own trolley or a red "hot-line" in its own box for which you alone have the key. Come to that, the Post Office itself will supply an antique style phone for an extra £85, or even a phone with Mickey Mouse holding the handset in his hand.

While such phones may seem an unnecessary luxury to many a harassed businessman, they are fast becoming the "in" symbol for the status-conscious executive. This attitude reflects the inherent paradox of the telephone. It is probably the single most important piece of equipment in the business world, yet instead of looking at ways to improve its effectiveness many executives can only consider its status value.

The telephone service within most organisations is inevitably given a low priority. It is considered as one of those activities that are ripe for economies by the cheese-paring mentality of many office managers. Yet it is only common sense—and backed up by numerous statistics—to consider how much potential business is lost by a poor telephone system. Moreover, that is without including the soiled industrial relations and multiplied clerical costs

which result just because the straightforward process of receiving and recording a message in some way breaks down.

While the much-maligned Post Office cannot entirely escape blame for the wrong numbers and poor quality connections, the main problem is the ignorance of companies and degree of inefficiency that would not be tolerated in other sections of the business.

A number of big companies now have effective computer-controlled switchboards with a wide range of answering services, facilities for dictation, methods to call up messages on television screens, procedures to allocate priority to certain calls, and automatic re-routing codes.

Such systems are invaluable in preventing the incoming caller from feeling abandoned, as so often happens with conventional switchboards. The provision of such facilities is not exorbitantly expensive for the large organisation because the necessary data processing, which is what these activities entail, can be incorporated in computer systems introduced for other purposes.

A little imagination can also make the telephone into an invaluable aid without investing in complicated and expensive apparatus. The robot telephone answering device is one such development that has been exploited, as one its many uses, for streamlining industrial relations and aiding recruitment.

Status

One manufacturer claims that telephones have achieved a new status for employees in British Oxygen by astute management. At any time during the day or night an employee can pick up his telephone and, by dialling an internal extension, listen to a house journal giving details of company activities. The service was introduced to help prevent individuals feeling they were cut off from each other.

A similar system has been established by the British Steel Corporation but with some refinement. That service includes the regular telephone answering system by which workers can ask questions of the management. They need not identify themselves, and their questions are answered during the following day's recorded information. Other technologies for filling the limited amount of telecommunications space in most offices are also moving from laboratory success to commercial application. One of the most important developments is the advent of electronic mail, or the transmission overnight of letters and documents from one microfilm file to another at a distant location.

Other new types of external telecommunications services include the facsimile transmission

of business documents from one office to another or between companies. Facsimile transmission is a well-established process pioneered in the post-war years by the Mullerhead company for sending newspaper pictures. More recently office equipment manufacturers have exploited this as an alternative for telex and postal services.

This development has meant designing machines which are as easy to operate as an office photocopying machine and capable of sending a document at speed. A target of two minutes' transmission for a foolscap document is regarded as a reasonable speed.

Most machines are in specialised use over private lines between company branches. But the prospect of a public facsimile network has become a possibility with agreement between the manufacturers and the national telecommunications authorities over an acceptable international method of working.

One of the main drawbacks to such machines and the more traditional teleprinter has been their bulk and noise, which has resulted in their location in a remote room. Their usefulness is inevitably diminished by the need to have information received on the machine delivered by internal messengers. Vital communications flashed across the world at the speed of light could take several hours to make the final short journey to the correct desk.

But two major recent developments have made teleprinters into machines that can operate in a normal office. One is the Random Access Memory to replace perforated tape during message preparation; the other is the microprocessor replacing most of the mechanical parts of the rest of the teleprinter.

The random access memory store was developed for computer use. It is controlled by a microprocessor containing a suitable programme. It forms the basis of a message store that can be edited, separated from any number of messages and transmitted. For nearly all teleprinter applications a store of 8,000 characters is sufficient. This represents about 120 lines of print—far longer than the average telex message.

The machine has no moving parts, comprising only the random access memory store itself (a few "chips" on a printed circuit board) and the microprocessor. Again, this is chip-sized and also controls the various other functions of the teleprinter, such as speed, system application and character definition. A handful of keys controls all the editing and printing control keys necessary.

Each character as it is keyed is allocated an address within the random access memory. A "pointer" moves along the addresses inserting the code for the characters as they are keyed on the keyboard. Invention of additional characters (impractical on paper tape except by making a second tape) is simple, press the insert key with the pointer standing at the correct place and type in the necessary characters.

With the lack of mechanical parts in an electronic teleprinter, the top speed available is considerably increased. An operator, given a typewriter keyboard with the same touch as an electric model, will be able to type at up to 100 words a minute, one and a half times as fast as a telex. But this figure is an average, whereas operators can exceed perhaps 200 words per minute rate for a short period.

David Churchill



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Financial Times Friday March 31 1978

N. Sea oil: The problems beneath the surface

BY RAY DAFTER, Energy Correspondent

THE Department of Energy will shortly announce plans for a new round of oil exploration concessions. At the same time it will award a special package of drilling concessions to the state-owned British National Oil Corporation.

Activity on these new blocks is expected to answer some troubling questions, such as how much oil and gas remains to be found. In British offshore areas so far unexplored and hence, how long the country can expect to remain self-sufficient in energy. The answers, however sketchy, will be crucial to both energy and economic policies.

The rapid build-up of North Sea production is leading to a task the oil industry's concern about its ability to maintain output in the second half of the 1980s. Anyone counselling caution runs the risk of being called a kill-joy. After all, the oil output of the North Sea is now about 1m. barrels a day—half way to self-sufficiency. Within two years the U.K. will be completely self-sufficient, ranking among the world's top oil producers.

But a warning has been sounded by, among others, Mr. John Kirkby, general manager of British Petroleum's exploration and production department. He points out that peak production from the 20 or so fields now on stream or under development will be reached in three years' time. This maximum rate, although more than sufficient to meet U.K. demand, will not last for long. Ten years from now output from these fields could have declined by half of their peak rate. The drop in production, if uncorrected, will come at an especially bad time since, if forecasts prove to be correct, will coincide with a worldwide shortage of oil supplies. It is almost inevitable, much higher crude oil prices.

However, U.K. self-sufficiency may be maintained, providing at least over the next few years oil companies can be encouraged to exploit many more fields. There are some more worrying factors. Companies claim that it is now taking longer to obtain Government approval for field development schemes. There is uncertainty about future depletion policies.

Companies still have qualms about working increasingly closely with B.N.O.C. But, above all, it is becoming increasingly difficult to justify commercial development when costs are going higher and newly found reservoirs are becoming smaller.

It is generally accepted that the industry is already exploiting the largest, most obvious and structurally the simplest fields in British waters. What is far from certain is the number of reservoirs and size of recoverable reserves yet to be identified. British Petroleum, one of the most experienced companies in the North Sea, takes a cautious (it would say realistic) view. It puts ultimate recoverable reserves at some 22bn. barrels or around 3bn. tonnes. This means, according to B.P., that nearly half of the British oil resources are contained in fields already on stream or under development.

Pessimistic view

What is more, B.P. believes that another group of 20 fields, whose existence is known, contain about 5bn. barrels. On this basis the industry has located between two thirds and three quarters of all the oil there is to be found. The Department of Energy, now being advised extensively by B.N.O.C., takes a less pessimistic view. It is sticking by previous estimates that ultimate recoverable reserves could be between 3bn. and 4.5bn. tonnes, or between 22bn. and 35bn. barrels.

Only a further extensive exploration programme will verify or refute these figures. So far most of the wells have been drilled in the North Sea. But as offshore licence concessions come more widely spread so operators are being tempted into new exploration areas. The West Shetland Basin has been receiving greater attention from the industry in the past year, partly thanks to a couple of promising discoveries.

Mr. Dick Fowle, British National Oil Corporation's director of exploration, told a conference of oil equipment suppliers and service companies earlier this month that during the next few years over 10 per cent. of all offshore wells would probably be drilled in the West

Shetland Basin. By 1981 the industry could be sinking 64 per cent. of its wells in new exploration areas, not covered so far by oil groups. These areas may be in the far north, in the Faroe Basin to the north west of Shetland, or in the English Channel and Western Approaches. What seems certain is that none of these areas will prove to be as productive as the northern and central areas of the North Sea.

Take the southern North Sea basin containing the gas fields. These reservoirs have already yielded over one-third of their proven gas deposits to the extent that for some time now Britain has been virtually self-sufficient in natural gas supplies. Mr. Fowle forecasts that there will be only limited drilling activity in this region. The gas accumulations thought to remain are likely to be small and require extensive—and expensive—appraisal drilling.

The central North Sea contains some of the most attractive and profitable fields, among them British Petroleum's Forties discovery (now reaching a peak output of 500,000 barrels a day) and Occidental's Piper field. All told there are eight oilfields in this region either on stream or under development. In terms of drilling success, the ratio of oil strikes to dry holes has been among the best, not only in the North Sea but in the world.

It is felt within the offshore industry that several more moderately-sized fields will be identified in this central area, although a number of these could be associated with major geological faulting and could thus be difficult to evaluate. B.N.O.C. expects at least 40 wells to be drilled in the central region this year.

Nine proven commercial fields have so far been located in the northern North Sea region. These include some of the biggest reservoirs of Britain's shores including Brent, Ninian and, the largest of them all, Statfjord, which straddles the British-Norwegian median line. Indeed, the main prospective area in this region follows the median line northwards. Here again the drilling success rate has been extremely high when set against worldwide exploration activity—a ratio of one

good hole in three was achieved between 1970 and 1976. There are thought to be a few, relatively small fields to be discovered. As they may well be associated with complex rock faulting they could require a good deal of evaluation drilling and, perhaps, special development techniques. Even so, it is forecast that 30 wells could be drilled in this area during 1978.

This brings us to the Continental Shelf area to the north-west of the U.K., described by Mr. Fowle as one of the most exciting exploration regions developing offshore. "Sufficient potential exists for a drilling programme that could last for several years even without the stimulus of a major discovery," he says. This region, at least immediately west of the Shetland Islands, is being examined much more closely now that the presence of hydrocarbons has been confirmed. Of the 25 wells so far drilled in the West Shetland basin, three have contained oil, one has found gas condensate, and seven have given oil shows. The most promising reservoir located so far seems to be in B.P.'s block 206/8.

Nevertheless, within B.N.O.C. it is thought that about 30 per cent. of the north-western area as a whole must be considered as prospective. On the plus side any oil found will be reasonably close to the Shetland and Orkney islands where provision has already been made for an extension of oil terminal facilities. To exploit much of this area, however, the oil industry would probably have to employ some novel production techniques. Only a small percentage of the prospective areas outside the currently licensed blocks are in water depths of less than 1,000 feet. One third of the prospective area is in water depths of up to 2,000 feet while the remaining area lies beneath a 4,000 feet to 5,000 feet deep.

To extract oil at these depths the companies would almost certainly abandon fixed platform systems in favour of a new technology, such as floating platforms tethered to the seabed or dynamically-positioned drillships. Moving south and back into more moderate water depths



British Gas Corporation is currently evaluating a sizeable gas field (the Morecambe discovery) in the Irish Sea and it is believed that further gas prospects remain to be tested in the area. But the region on this lower western side of Britain thought to have the greatest potential is in the Western Approaches. The map clearly shows that there could be a number of sizeable pockets of hydrocarbon-bearing rock in the approaches to the English Channel. At least three of these prospective areas straddle the British-French median line which explains why each country made such a fuss over the definition of this boundary. Most of the ingredients for successful exploration are present in the area. Source rocks capable of producing hydrocarbons are known to be present in Jurassic, Cretaceous and older geological formations. Seismic tests have indicated that structures capable of trapping oil or gas also appear to exist. What is not known is whether there is any oil or gas to be found. Only a full-scale drilling programme will provide the answers. The industry is to take its first tentative steps into this area this summer, following the recent award of the initial batch of westerly drilling licences.

Those concessions were offered under the fifth round of licences in 1976. It was by far the smallest round presented by the Government; only 71 blocks depleted controls and field development authorisation could delay the exploitation of economically marginal discoveries. Offshore operators have sounded warnings almost since the day when the first oil field was discovered. The uncertainties and frustrations have not prevented them from becoming fully committed to what is still one of the brightest offshore exploration areas in the world. Where things have changed, however, is that the Government's move towards greater control over oil exploration and production is coinciding with the realisation that the best prospects are already being exploited. What remains to be found will be very much a second best.

Letters to the Editor

Changes in the shires

From the Leader, Leicester City Council.
Sir—Mr. Roland Freeman, in a letter of March 15 and 23, not a lone voice in advocating the necessary changes in the local reorganisation of local government, although he has so far only provoked correspondence from a county council out of view (Mrs. Coker on March 21 and Mr. Barnes on March 23).

There is a great deal of support for Mr. Freeman's case for change in the shires, particularly in the ten largest non-metropolitan districts of Bristol, Cardiff, Derby, Hull, Leicester, Nottingham, Portsmouth, Plymouth, Southampton, and Stoke Trent (all with populations over 200,000 and one, at least, with twice that figure).

As chairman of the executive council of the County Councils Association, one would perhaps expect Mr. Coker to spring to the defence of a system which transferred to county councils major functions of local government such as education and social services in all but the metropolitan areas, and it can therefore only be considered as commendable with faint praise that he "in many ways" is remarkably successful.

Threatened

In many ways it has been remarkably less than successful all parts of the country, but particularly in the larger cities, shires, and shire counties, such as Leicester. So much so that the Prime Minister has now officially instituted a departmental review of its many shortcomings with a view to redistributing some of the functions currently satisfactorily between strict and county councils, and he can only assume that Mrs. Coker wrote her letter because she feels threatened by its possible findings.

The duplication and wasteful redundancy which the 1974 reorganisation engendered is now being acknowledged by the more sensible all-purpose authority system which is being introduced in the larger cities. Reorganisation would be a further costly upheaval. I feel quite sure that in the long run it would be more economical (as well as far more responsive to local needs) and that this is why the only comment that Mrs. Coker could make regarding the present satisfactory system is that one of the county councils' staff associations are opposed to change.

While it is true, as Mrs. Coker says, that the Association of District Councils has not asked for education to be transferred to district councils, it is the fact that the members of Leicester City Council are most closely concerned with this service, that it could be administered far more efficiently and responsibly by the city as it was prior to 1974. Mr. Barnes does not seem to disagree with this but seems prepared to accept the anomalous and unsatisfactory situation of the larger non-metropolitan cities merely for the sake of stability.

Many of us do not place such a premium on "stability" and would give a much higher priority to achieving a local government system with which people can readily identify and which can really serve their needs. I do not believe that people in such cities as Leicester will ever get accustomed, for example, to applying to county hall for school bus passes or complaining to county not city councillors about the levying of charges for home help.

Cities have historically formed the most natural and the most effective bases for local government and where the 1974 reorganisation blurred the edges of such local identities and introduced two-tier and concurrent functions with county councils, it has potentially proved unsatisfactory to elected members, to local government officers, but most importantly of all, to the citizens whom it was meant to serve.

Mr. Freeman is right. The sooner some constitutional changes to the present local government system are made the better.

W. H. G. Coker, Leicester City Council, Leicester.

Telephone meter

From Mr. E. Wood.
Sir—The device described in the Technical Page (March 22) sounds complicated. A simpler device has been available for years.

You can rent from the Post Office a dial meter that shows the number of units being used as each call proceeds. It also shows the cumulative total of units. This you can monitor any call and check your phone bill. But there are snags. The Post Office charges £1.50 rental per quarter for the meter and it does not guarantee that it is as accurate as the meter on which the bill is based. More important, the meter seems to be invisible to tenants who are not paying the bill.

E. G. Wood, 10, Tugwell Lane, Warrle Bridge, Stockport, Cheshire.

Contingency politics

From Mr. D. Folkes.
Sir—In reviewing (March 23) together two books, one about Mrs. Thatcher, Mr. Rex Winesbury asks: "What is the Thatcher political philosophy?" Would that he kept it secret. I can assure Mr. Winesbury that if anyone of his standing cares to write to her asking her to clarify her

Protected wreckers

From Mr. G. Ashman.
Sir—Justinian (March 25) quotes Lord Denning as "asserting that the law would be in a sorry state if a man committing a crime could turn round and say that he was immune from suit and could cause special damage with a degree of impunity."

Right first time! In my septuagenarian old age I have had helplessly (albeit profanely) to watch a procession of smirking gentlemen parade across my TV screen while they inform me that they can make much money for themselves by cutting off my electricity, gas, coal, bread, mail newspapers, buses, trains, refuse collection, hospital and fire services, and much else. They can, in fact, make more money for themselves by this method than by doing the actual work which is under dispute.

They are only too correct! The proof? Were it not for the striking pickets would never again be heard in the land—only the roar of industrial machinery.

Moreover, had our position been reversed, and had I commodored these gentlemen in a similar way, they could prosecute me pronto. I, unless, have no legal redress! I have no 1908 law which gives me exemption from legal accountability for such damage to my country and my fellow citizens.

Common sense screams to high Heaven that a courageous protest, made on the alteration of existing laws on this matter. Unless work-dodging is made less profitable than work (currently it is a trade in itself) one-day England will continue still to be dragged at the heels of the protected wreckers.

G. T. Ashman, Cam Vean, 3, Meadgate, Camerton, Avon.

Clip-board selling

From the Agency Manager, Standard Life Assurance Co.
Sir—The Men and Matters of March 21 reports that Mr. Trevor Deaves of Berkeley Walbrook had implied that his clip-board sales activities could result in business being placed with Standard Life. I correct the record by telling you that I can trace no agent of ours by the name of Berkeley Walbrook and further that my Company would not accept business from any agent if we knew it had been secured directly as a result of clip-board selling.

It is essential that life assurance should be sold honestly and openly and no professional intermediary or insurance company need feel ashamed (by disguising the fact) of selling essential protection or future security to members of the public.

G. P. Glover, The Standard Life Assurance Company, PO Box No. 82, 3, George Street, Edinburgh.

Full price air racket

From the Managing Director, Quazum Securities.
Sir—For the past 15 years I have been a regular air traveller earning substantial foreign currency for this country. I regard the purchase of an air-line ticket as a contract to be honoured like any other. I do not fail to turn up, change my route capriciously or do any of the things the airlines claim cause extra cost in handling business travellers.

Until recently I have been paying more for air tickets than holiday-makers have been paying for complete holidays where they are spending foreign currency, not earning it.

Recently I discovered the so-called bucket shops and was delighted to find that not only could they produce me a saving of 20 to 30 per cent., but the staff knew about reporting times, airport bus routes, etc., than I do. This is in marked contrast to my experience with the "regular" travel agents.

From your report (March 23)

The water rate

From the Press Officer, North West Water Authority.
Sir—Mr. R. A. Morris (March 23) has got his facts wrong and consequently his conclusions are invalid. The water bill, to which he refers, this year includes the sewerage charge formerly collected with the general rate. This charge was explained in the leaflet sent out with the bills. For the record his total charge for water and sewerage services this year is 4.8 per cent. more than last year.

Peter Gregory, North West Water Authority, Pineapples House, 61, Smeeth, Warrington, GL, Sarkey.

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COMPANY NEWS + COMMENT

Strike cuts Lucas to £27.6m. at half time

REFLECTING THE effects of its lengthy U.K. toolroom strike, pre-tax profits of Lucas Industries fell from £34.7m. to £27.6m. in the half year to January 31, 1978. The strike is said to have cost Lucas £11m.

Turnover for the period rose from £218.2m. to £262.9m. and the directors say worldwide demand remained strong. Turnover would have been higher but for the restriction on supplies from the U.K. factories.

Despite this, and other areas of market weakness, good progress was made both at home and overseas.

Vehicle equipment businesses have obtained new contracts to supply European vehicle and engine makers, and industrial equipment businesses continued to advance.

Plans to substantially increase the group's share of the U.S. market are making good progress.

The current firm demand is expected to be maintained and directors say no effort will be spared to recover further the ground lost in the first half.

Earnings per £1 share are shown to have declined from 17.14p to 13.75p.

The interim dividend is lifted from 2.122p to 2.354p net. Last year's 6.088p final was paid on recordable profits of £77.26m. The interim dividend will absorb £2.19m. (£1.99m.).

	1977	1976	1975
Sales	218.2	218.2	218.2
Depreciation	11.38	11.38	11.38
Trading surplus	30.24	30.24	30.24
Shareholders' interest	1.32	1.32	1.32
Profit before tax	27.6	27.6	27.6
Tax	14.38	14.38	14.38
Net profit	13.22	13.22	13.22
Dividends	2.35	2.35	2.35
Attributable	10.87	10.87	10.87

Fothergill & Harvey

AS FORESHADOWED at half-time, pre-tax profit of Fothergill & Harvey advanced from £202.679 to £215.132 for 1977, on higher turnover of £12.04m. against £20.64m.

Tax takes £282.132 (£28.701 credit restated) giving available profit down from £211.380 to £286.020. Stated earnings per 25p share are 12.48p (11.64p). The dividend total is the maximum permitted 6.213p (5.581p) net, with a 3.9613p final.

Capital spending in 1977 was slightly below budget at £20.6m. Borrowing was up £1.37m. and gearing was maintained at 40 per cent. Authorised capital expenditure for the current year amounts to £5.8m.

The group benefited by a change in the method of accounting for deferred tax to take advantage of stock appreciation relief and allowances on capital spending. Comparatives have been amended.

For the second successive year, BBA's principal overseas companies have proved the stumbling block in the group's growth path. Last year, overseas profits fell 43 per cent. more than offsetting the 30 per cent. increase in U.K. earnings. The offending companies were the West German subsidiary, Textar, which failed to provide the expected profits after losing an important Mercedes-Benz contract, and Scandura of the U.S., which was hit by the miners' strike. Textar has since regained the valuable Mercedes-Benz business while Scandura should be profitable by the year-end.

Although the early part of this year remained a problem. So both these areas should produce better results this year, while the U.K. operations may well continue to register satisfactory progress. The shares fell 3p to 47p yesterday for a yield of 8 per cent. and a p/e of 4.8.

The directors expect better results from the principal overseas companies Textar and Scandura Inc. in 1978 but they say it is too early for them to make any considered forecast for the year.

Freight material sales increased but sales of belting were down. These, together with sales by overseas companies, totalled £70m.

In the U.K. Mintex continued to make good progress with both sales and profits higher.

Lloyds Eurofinance N.V. Copies of the Accounts of Lloyds Eurofinance N.V. at 30th September 1977 are now available from:

The Secretary, Lloyds Bank International Limited, 40-48 Queen Victoria Street, London EC4A 4EL.

7th March, 1978

Company	Page	Col.	Company	Page	Col.
APV Holdings	30	4	House of Lerose	30	8
Assd. Book Publishers	29	3	Lilley (F. J. C.)	31	5
Aurora Holdings	28	2	LWT Holdings	28	4
BBA Group	28	1	Lucas Inds.	28	1
Biddle Holdings	30	5	Martin (R. P.)	30	5
British Petroleum	30	6	Mixconcrete	29	4
Bridon	31	4	Mole (M.)	29	2
Bruntans (Musselburgh)	28	6	Prudential Assce.	30	1
Bulgin (A. F.)	28	8	Pye Holdings	28	5
Dassault Bros.	30	3	Reckitt & Colman	29	1
English Property	30	3	Relyon (P. B. W. S.)	29	3
Erith & Co.	28	7	Sirard	29	4
Fothergill & Harvey	28	1	Transatlantic Market	30	3
House of Fraser	28	7	Ward White	28	8
			Warne Wright Rowland	28	3

Record £2.5m. at Aurora

PRE-TAX profit of Aurora Holdings, general and precision engineering, was a record £2.5m. in the 18 months to January 31, 1978. The result is after interest of £224,000 (£200,000 and £24,000) and before tax of £208,000 (£208,000 and £219,000).

Undiluted earnings per share are shown at 22.11p (£1.77p) and 26.19p on capital increased by a one-for-four rights issue and acquisition issues. Diluted earnings are given at 20.98p (20.71p and 24.09p).

The final dividend per 26p share is 5.96p net (£1.96p) for a total pay-out of £2.5m. For the 18 months of 1977-78 when Aurora altered its balance date, payments totalled £4,350, while for an annualised 1976 the pay-out was £4,350.

Directors say gearing of the group was reduced from 0.97 to 0.69, without taking into account sales of surplus land and buildings totalling £234,000 negotiated since the year-end.

They say order books show a significant increase and the group maintains a strong position in all its main areas.

They say 1977 saw excellent progress in its expansion policy, with a successful rights issue in June; in September the acquisition of Colnag Group; in December the acquisition of Lerche Machine Tools and Wm. Osley and Co.; in December the repayment of debenture and unsecured loan stocks and the transfer of the group's brick-making interests to Scottish Brick Corporation, reducing group borrowings by £600,000.

Growth in practically all its divisions contributed to the 18 per cent. rise in pre-tax profit at Aurora Holdings last year. As in past years, the engineering division—the speciality of the Sheffield-based group—proved to be the bright spot with the machine tool and fastener divisions making good profits. Metals gave a creditable performance too. However, hardware was weighed down by weak overseas operations and process and industrial plant showed reduced profits mainly due to increased costs. But these weaknesses are expected to be smoothed over in the current year. With the order book showing a significant increase and full contributions expected from its latest acquisitions, a growth of some 35 per cent. in pre-tax profit to £2.4m. is possible for 1978. Of the acquisitions, the Colnag Group, which only contributed three months profits to the 1977 figures, is expected to make about £1m. profit while Lerche Machine

Earnings per 3p share for the year are shown at 4.56p and the dividend is increased from 0.924p to 1.032p, costing £23,220 (£20,790). After tax of £1,110,313, against £1,234,086, net profit came out at £102,900 (£127,973).

On turnover up from £18.04m. to £20.07m. for 1977, Warne Wright and Rowland reports a rise in taxable profits from £1.38m. to a record £1.62m. after £0.64m. against £0.38m. at the interim stage. Directors then said that the full year results should show an improvement in 1978.

In increased capital last year's one-for-two rights issue earnings for the year are shown to be down from 15.034p to 12.524p and the dividend is lifted to 5.64p (£1.704p) net with a final of 1.32p.

Tax for the year was up from £26,803 to £270,044 and the directors say that the 1976 figure has been restated according to the £219 basis. The group is a fastener manufacturer, drop forger and engineer.

At half-way, when pre-tax profit was down from £1,146,000 to £796,000, the directors said that in the first two months of the second half there had been no further fall in earnings, which were running at the average of the first six months. Second half results were expected to be in line with first-half earnings.

The directors now say that although 1978 benefited by £25,530 from capital gains and interest relief grant, the current year benefited in this way by £101,324. After tax £213,557 (£1,185,889), net profit is £1,151,225 (£910,288). Earnings per share are shown at 14.39p (11.38p).

A MEETING of creditors of Draycott Containers Services, has been called at the offices of W. H.

Draycott Containers

Draycott Containers

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LWT expands midyear

REPORTING TAXABLE earnings up from £2.35m. to £3.48m. for the half year to January 22, 1978, the directors of LWT (Holdings) say that the rate of advance must be regarded as, in part, exceptional.

The substantial increase in programme expenditure to which the company is committed during the full year was not fully reflected in the first six months, they explain.

Turnover for the independent television contractor was 38 per cent. higher at £20.12m. (£14.52m.) and is currently running at a level satisfactorily above that of last year.

The net interim dividend is lifted to 3.555p per 25p share, against 2.54575p equivalent after a scrip issue. A final of 3.244p was paid last time from a full year surplus of £5.62m.

LWT has taken advantage of its last year of exemption from dividend restraint to push up the interim dividend by 25 per cent. The first half results support this rise, with profits up 37 per cent. The improvement is mainly due to a rate card increase of 19 per cent. in September which has helped to boost advertising revenue by about 37 per cent., well ahead of an increase in national TV advertising revenues of about 31 per cent. over the same period.

LWT must now have regained most of the market share it lost to Thames in London last year and the current trend of increasing demand for advertising time, profits of at least £6.5m. should be possible for the year. Meanwhile, with interest rates at their current low level, there is increasing pressure to find an alternative use for the company's liquid funds, which stand at about £10m. At 125p the shares are on a prospective p/e of 8.4. Assuming a 25 per cent. increase in the dividend total, the yield is 0.4 per cent.

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Dividends Announced

Company	Current dividend	Date of payment	Corresponding dividend	Total for year	Total for year
APV	3.71	May 19	3.32*	3.71*	3.71*
Assoc. Book Publishers	2.32	—	2.4	4.02	3.83
Aurora Holdings	3.96†	May 26	2.16	3.57†	6.44†
BBA Group	1.30	—	2.38	3.68	5.98
Biddle Holdings	4.63	May 26	3.98	6.88	6.11
Bridon	2.54	May 24	3.65	6.14	2.46
Brit. Mohair	2	May 12	1.73	3.73	2.46
Bruntans (Musselburgh)	—	—	—	—	—
Bulgin	3.98	—	2.51	7	6.32
Cartwright	0.76	July 3	0.71	1.31	1.18
Desfontaines Brothers	2.37	May 5	1.42	4.47	2.43
English Property	1.03	—	3.25*	5.32	3*
Erith & Co.	3.44	May 19	1.05	2.3	2.3
Fothergill & Harvey	3.66	—	3.02	5.49	4.94
J. Howitt	1.03	—	3.56	6.21	5.56
House of Fraser	3.08	—	0.92	1.03	0.92
House of Lerose	2.12	June 26	2.76	4.77	4.37
FJC Lilley	1.37	June 2	1.71	3.02	3.54
Lucas Industries	int.	May 15	0.78	2.57	1.3
LWT Holdings	int.	April 10	2.13	—	8.22
Magnum	1.87	—	2.64*	4.51*	8.19*
R. P. Martin	int.	April 5	1.08	2.7	6.44
Mixconcrete	1.92	April 28	0.4	—	1.35
M. Mole and Son	0.41	May 1	2.5	—	5.94
Municipal Props.	3.1	May 1	1.72	3.19	2.58
Transatlantic Market	int.	—	0.38	4.01	0.38
Prudential Assurance	4.2	—	4.56	5.1	4.56
Pye Holdings	2.54	June 2	3.75	6.53	8.01
Reckitt & Colman	int.	May 28	2.9	3.57	2.9
Reynolds P.B.W.S.	2.6	July 3	5.34	10.61	9.59
Renong Tin	1.3	June 3	2.33*	4.1	3.67*
Sirard	1.26	May 5	1.15	—	5
Stratford	1.26	May 18	1.15	—	2.8
Transatlantic Market	int.	April 28	34.42	—	34.42
Viscose Development	1.67	June 14	1.48	2.83	2.33
Ward White	1.77	June 14	1.5	2.71	2
Warne Wright	1.22†	June 1	1.09	2.94†	2.17
Wilkinson Warburton	3.51	May 30	2.73	5.11	4.47
Wm. Osley and Co.	0.98	July 1	2.73	3.71	1.13
Dividends shown pence per share net except where otherwise stated.					
*Equivalent after allowing for scrip issue. †On capital increased by rights and/or acquisition issues. ‡For 18 months.					
429p annualised. †Australian cents throughout.					

Provisions for subsidiary hit Pye Holdings

ATTRIBUTABLE profit for 1977 of Pye Holdings rose to £4.1m. compared with £3.2m. for 1976, adjusted after the elimination of amounts attributable to the activities sold during 1977. The figures include £4.09m. against £2.2m. attributable profits of the subsidiary Pye of Cambridge and £5,000 from the parent company compared with a loss of £23,000 last time.

Shareholders per 25p share are shown to be up from 12.1p to 16p and the dividend is increased to 3.384p (2.9p) with a net final of 3.244p. Treasury consent for the increase has been given.

Debit of £3.74m. for 1977 against a credit of £2.77m. last time. The directors state that irregularities have come to light in the sale of Pye of Cambridge Industries which are still to be investigated. The extraordinary debit includes a provision of £1.7m. which the directors believe should be adequate to cover the full deficiency.

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Shortfall at Erith & Co.

ON TURNOVER of £21.7m. against £20.8m. last time, taxable profit of Erith and Company declined from £37,972 to £72,494 in 1977.

At half-way profit was down from £507,000 to £233,000 and a shortfall on last year's record was forecast.

The directors say the lower profit reflects the continuing low level of activity in the building and construction industry and also the need to make adequate provision for bad and doubtful debts in view of the many failures among building companies.

Trading in the second half showed an encouraging upward trend and prospects are looking up for 1978.

Net profit emerged at £277,825 (£258,273) and earnings per share are given at 3.14p against 0.83p last time.

The final dividend of 3.8400p net.

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British Mohair at peak £2.41m.

DESPITE A slight second-half downturn from £1.27m. to £1.36m. British Mohair Spinnery finished 19

Reckitt and Colman at £58m. and confident

FTER RISING from £36.7m. to £45m. in the first half, pre-tax profits of Reckitt and Colman rose 1977 ahead from £31.43m. to £37.91m. on sales of £257m. compared with £248.15m. Profits were struck before exchange losses of £3.4m. against gains of £4.95m. in 1976.

Earnings before exchange differences are shown at 53.3p (58p) per 20p share. A second interim dividend is declared of 10.5478p net making 10.5478p so far compared with last year's total of 9.5877p.

One of the aims of Reckitt and Colman is at least to maintain the value in real terms of dividends paid to shareholders. Dividend has been in force since 1958 and the maximum permitted dividends have been paid each year. In order, however, to ensure the value in real terms of dividends compared with those paid in 1968, the Board estimates that the required increase in the 1977 dividend, over the amount paid for 1976, would be 12.5p per cent, compared with the 10 per cent increase contained in the 1976 and second interim dividends already declared.

It is intended, therefore, to pay a third interim dividend of 2.85322p per share, making total dividends for 1977 of not less than 12.5p per share. A third interim dividend of 2.85322p per share would be £1.77m. plus ACT of £0.91m. which provision has not been made in the 1977 accounts.

1977	1976
Turnover	£257.0
Operating profit	£45.0
Interest payable	£2.7
Profit before tax	£42.3
Income tax	£4.95
Profit after tax	£37.35
Minority interest	£0.4
Profit attributable to shareholders	£36.95
Dividend	£10.55
Reserves	£26.4

A geographical analysis of sales and pre-tax profits in 1977, compared with 1976, is set out below with comparative figures for earlier years.

The Directors have declared a final dividend of 4.198p per share payable on 25 May next. This, together with the interim dividend of 2.450p per share declared in September last, amounts to 6.648p. Adding an imputed tax credit at the rate of 34/66ths, the equivalent gross amount is 10.073p per share, and compares with 9.158p per share for 1976.

18.8m.) and £7.47m. (£6.42m.).			
Corporate interest and expenses:			
£1.68m. (£1.04m.).			
Food and wine contributed			
£1.78m. (£215.23m.) to sales and			
£1.54m. (£15.88m.) to profits;			
Rehold and toiletry £193.25m.			

Non-life	1977	1976	1975	1974
Premium income	358.4	321.9	233.9	190.8
Underwriting loss	(9.5)	(10.2)	(8.3)	(4.7)
Investment income	23.4	21.5	15.7	11.5
Other income	13.9	11.3	7.4	6.8
Other expenses	5.8	5.0	4.1	1.6
To Profit and Loss Account	10.3	6.3	3.3	5.2

Profit and Loss Account	1977	1976	1975	1974
Life	15.8	13.6	12.0	8.0
Non-life	10.3	6.3	3.3	5.2
Other net income	5.7	4.5	2.7	2.9
Profit for the year	31.9	24.4	18.0	16.1
Retained profits	12.1	8.0	3.2	4.6
Dividend cost	19.8	16.4	14.8	11.5
Equivalent gross dividend per share	10.073p	9.158p	8.326p	7.711p

(Earnings per share are not appropriate for life assurance business and have not therefore been given)

The growth of income and profits in 1977 has been reduced by the improvement in the sterling exchange rate.

There was a continued improvement in the surplus from life business which enabled policyholders' bonuses to be increased and a large transfer to Profit and Loss Account to be made.

The non-life underwriting loss showed a small reduction in total after providing for a refund of some £3.3m to policyholders in Canada in accordance with the requirements of the American Insurance Board. Some worsening occurred in the Company's underwriting results in the United Kingdom. There was continuing adverse experience in the domestic property account and a small loss on the motor account. Commercial property and pecuniary loss accounts and long term general business continued profitable. Overall the results showed little change.

Overseas the Company's results in Canada remained good. Australia continued to show improved profitability and L'Escaut produced better results. Underwriting experience in New Zealand and Holland and in our South African subsidiary was disappointing.

Although the underwriting results of The Mercantile and General were similar to last year the transfer to Profit and Loss Account showed a significant improvement.

The Shareholders' Funds of the Group were increased by some £30m during 1977 by the acquisition of the shares of The Standard Trust Limited. The Group solvency margin at 31 December 1977 was 53%.

Bonuses on the Company's participating life and annuity business have been declared as follows:-

Ordinary Branch Assurances (United Kingdom)

(a) Reversionary bonus: 24.40% (£4.20%)

(b) Terminal bonus for policies issued in 1978 (1975) or earlier, payable on claims by death or maturity in the twelve months commencing 1 April 1978. (Examples shown below.)

Year of issue	1977	1976	1975	1974
1968	£15.30	£12.40	£12.40	£12.40
1963	£21.00	£21.00	£21.00	£21.00
1958	£47.00	£47.00	£47.00	£47.00
1948	£83.60	£83.60	£83.60	£83.60
1938	£118.60	£118.60	£118.60	£118.60
1928	£140.00	£140.00	£140.00	£140.00

Industrial Branch Assurances

(a) Reversionary bonus: 22.80% (£2.60%)

(b) Terminal bonus for policies issued in 1978 (1975) or earlier payable on claims by death or maturity in the twelve months commencing 1 April 1978. (Examples shown below.)

Year of issue	1977	1976	1975	1974
1968	£14.10	£9.20	£9.20	£9.20
1963	£28.40	£23.70	£23.70	£23.70
1958	£43.00	£38.70	£38.70	£38.70
1948	£73.90	£66.20	£66.20	£66.20
1938	£104.90	£97.50	£97.50	£97.50
1928	£126.00	£106.60	£106.60	£106.60

Group Pensions Business (United Kingdom)

The rate of annual bonus under deferred annuity contracts has been increased to £7.00% compound (£6.50%) and under cash accumulation contracts to £4.80% compound (£4.40%).

Other Business

The rates of bonus on United Kingdom personal retirement annuity plans have been increased and increases have been made in some bonus rates for overseas business.

Prudential

The Prudential Assurance Co. Ltd. 142 Holborn Bars, London EC1N 2NH.

Mixconcrete reaches £1.2m.

PRE-TAX profits of Mixconcrete (Holdings) recovered from a half-time downturn from £459,000 to £150,000 to finish the 1977 year just ahead at £1.2m. compared with £1.18m. last time. Turnover was unchanged at £28.6m.

At the interim stage the directors said that although short-term prospects for the construction industry were not encouraging, results for the second half should not show the same marked reduction as that of the first half.

Earnings are shown to be down from 6.68p to 3.98p per 25p share and the dividend is increased to 2.1944p (2.98p) with a final of 1.9153p net.

Pre-tax profit was struck after interest of £22,059 (£27,832). Tax for the year took £253,666 (£289,059) and £255,890 (£322,235) was retained.

A first and final dividend of 0.4125p (0.375p) has been proposed.

Mole makes hand tools, trailers and equipment for the television industry.

Reylon at peak £1.29m.

ON SALES of £3.04m. against £2.85m. taxable profit of Reylon £1.29m. has been released to re-serves and has been used to write down goodwill.

The percentage increase in earnings is more than that of a profit before tax because of additional tax relief in the U.K. on capital expenditure and stock relief.

Following the change in accounting policy for deferred tax, £13.8m. has been released to re-serves and has been used to write down goodwill.

Net borrowing increased by £3.51m. and totalled £30.65m. This increase is less than the amount incurred on acquisitions and reflects the tight control maintained over the use of the group's financial resources. The financial facilities available to the group are adequate to finance its trading activities and expansion plans during the current year.

Associated Book ahead to £2.6m.

INCLUDING ASSOCIATE company contributions of £11,090 compared with £10,000, taxable profit of Associated Book Publishers lifted from £2.25m. to a peak of £2.61m. in 1977. Turnover was £23.64m. against £22.37m.

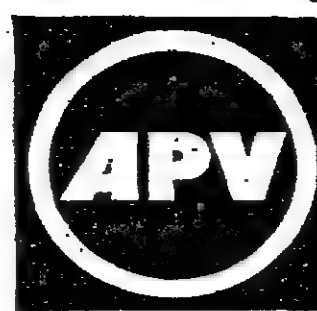
After tax of £1.26m. (£1.17m.) and minority interests of £243,000 (£250,000), attributable profit comes out at £1.1m. (£889,000). At half-time profit was ahead from £378,000 to £391,000, and a satisfactory full-year advance was anticipated.

Earnings per 20p share are shown at 30.4p (23.8p), and a second interim dividend of 2.518p net takes the total to a maximum permitted 4.018p (£649). In the event of a change in the ACT rate the amount of unpaid dividend will be adjusted accordingly.

First half jump by Sirdar

REPORTING a jump in pre-tax profits from £307,000 to £386,000 for the 26 weeks to January 14, 1978 on turnover of £10.11m. compared with £9.21m. the directors of Sirdar, the knitting and rug wool manufacturing group, say that the high level of sales is being maintained and the improvement in profit is expected to continue through the second half. Profits for all 1978-77 came to £1.4m. on sales of £16.44m.

First half earnings are shown to be ahead from 6.3p to 11p per 25p share pre-tax and from 5.7p to 8.9p after tax. The interim dividend is lifted from 1.15p to 1.26p net costing £94,339 (£85,763). Last year's total was £2,790,339.



APV HOLDINGS LIMITED

The upward trend continues

OPERATIONS: Process engineers, plant manufacturers, fabricators and steel foundries.

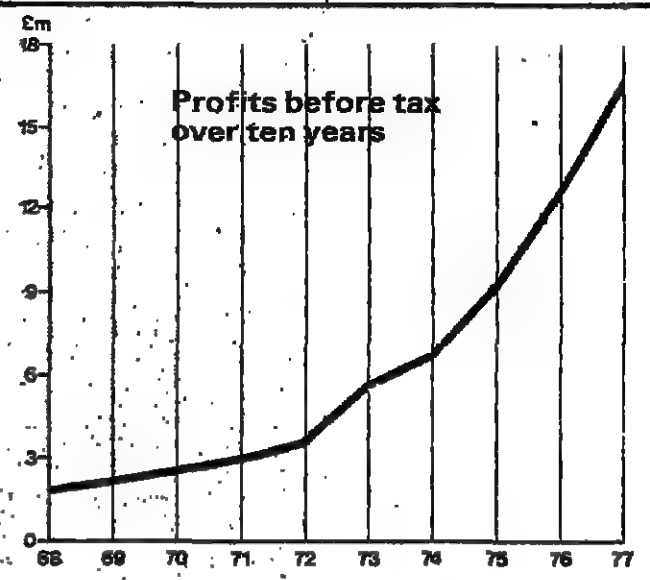
PRODUCTS: Heat exchangers, evaporators, dryers, pumps; refrigeration and other specialised processing equipment.

MARKETS: Dairy, food, brewery, chemical, petroleum and marine industries.

GROUP: 60 operating subsidiaries in 20 countries.

EMPLOYEES: 12,900 of whom 5,250 overseas.

ORDERS RECEIVED: £237 million in 1977.



	1977	1976
£'000	£'000	£'000
Sales	213,400	£137,400
Profit before tax	16,645	12,607
Earnings per share	27.11p	25.13p
Ordinary dividends	5.7071p	5.1808p

APV Holdings Limited, P.O. Box No. 4, Crawley, West Sussex, RH10 2QB.

Grindlays Holdings Limited

51% of the shares of Grindlays Bank Limited are held by Grindlays Holdings which is quoted on The Stock Exchange, London.

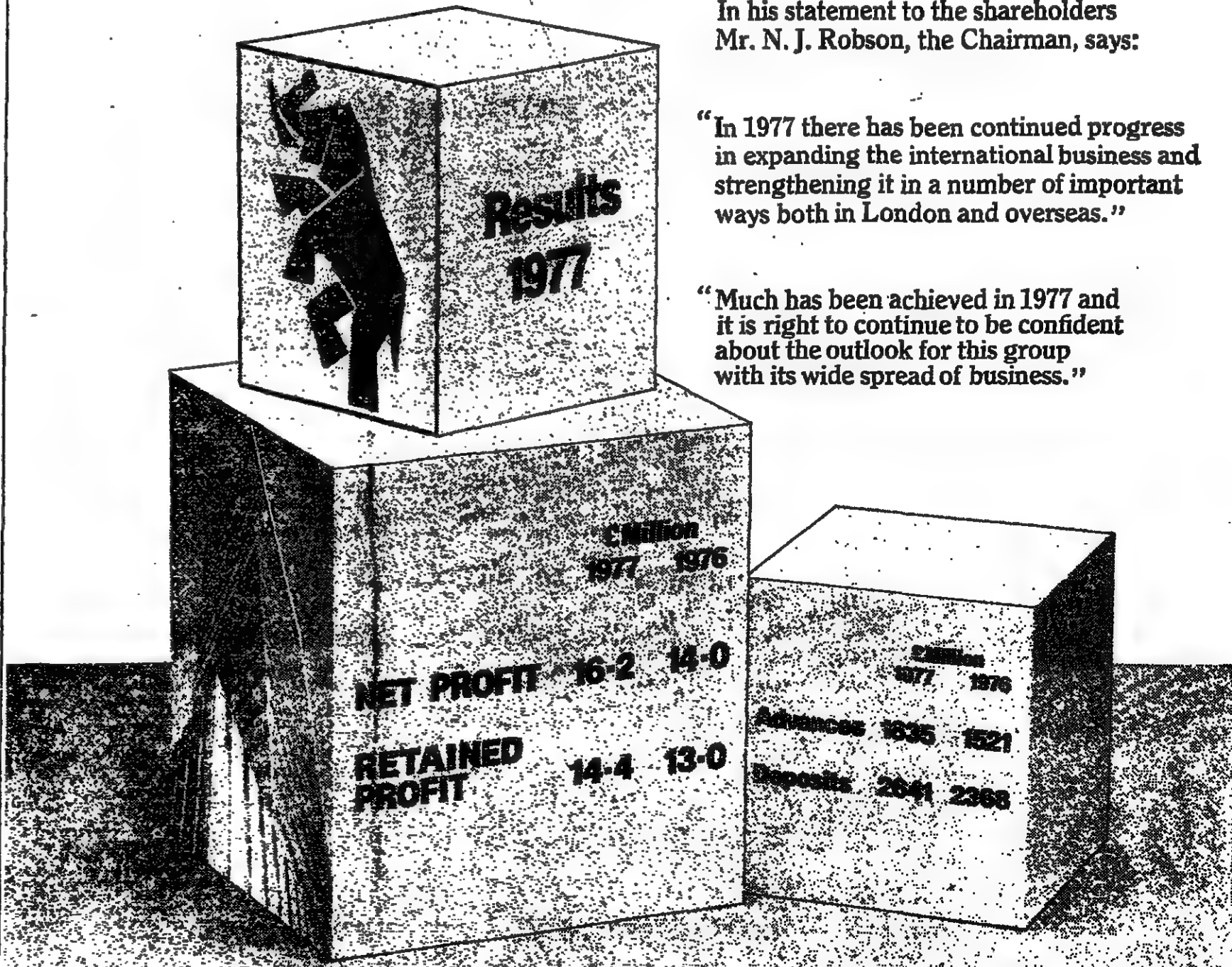
Grindlays

A name you can bank on around the world

In his statement to the shareholders Mr. N. J. Robson, the Chairman, says:

"In 1977 there has been continued progress in expanding the international business and strengthening it in a number of important ways both in London and overseas."

"Much has been achieved in 1977 and it is right to continue to be confident about the outlook for this group with its wide spread of business."



Grindlays Bank Group

23 Fenchurch Street, London EC3P 3ED.

BIDS AND DEALS

Howden to buy rest of Howden Parsons

By Andrew Taylor

Howden Group, the Glasgow engineering concern, is expected to announce today that it has exercised its option to buy the remaining 40 per cent of the Howden Parsons turbine rector business in Canada, that it was not already owned.

Northern Engineering Industries — the power engineering group created by the merger of Reynolds Parsons and Clarke Harman — is to sell its stake in the Canadian company to Howden, which specialises in the manufacture of air, gas and fluid handling equipment. The price, it is not disclosed, but is thought to be in excess of £5m.

The option to buy the NEI stake was at the time of the merger in September and negotiations with Howden have been continuing since then.

Earlier this year Howden revealed that the Canadian company has run into problems in its first half as a result of re-organising its operations within the Canadian power construction programme at a weak Canadian dollar.

At the interim stage Howden's re-organised profits, reflecting the Canadian difficulties, were virtually static at £1.56m. The group forecast that full year profits would be in line with the previous year's £4.65m.

The deal would appear to leave a gap in NEI's Canadian operations with the group now represented in that country solely by its turbine generator maintenance subsidiary Parsons Canada. However, the group is shortly expected to announce plans to expand its Canadian interests through this subsidiary.

It has already announced plans for a major rationalisation of its overseas operations while in the UK, the group is currently involved in several merger negotiations following its acquisition of International Combustion Holdings at the beginning of this year.

Yesterday it was announced that the Monopolies Commission will not be asked to investigate the proposed merger with Baldwin and Francis, a privately-owned motor control and switchgear company which primarily services the mining industry.

The group has declined to reveal the terms which have been agreed — preferring to wait for the publication of B&F's forthcoming annual results. However, NEI has said that total price will be less than 10 per cent of its own net assets.

Meanwhile, talks are still progressing with Babcock and Wilcox with the aim to merge the two group's boiler-making interests. Full details are understood to have been agreed. Babcock are seeking to raise £70m to pay for their stake in the merged Babcock Chapman company.

NEI are also now poised to take steps towards compulsory purchase of the few remaining shares in International Combustion Holdings that it does not already own.

DOULTON

Doulton and Co. has acquired from R.T.Z. Industries and Soladex (Holdings) the minority interest of 21 per cent of Doulton Glass Industries (Holdings) Ltd. £2.5m cash. DGI carries on business as glass merchants, glaziers and processors.

The attributable net profit of DGI for 1977 was £2.8m, an increase of 35 per cent, and the proportion attributable to the minority interest was £252,000. Depending on the profit achieved by DGI in 1978, an additional purchase consideration of up to £200,000 may be paid after

Beecham to invest £3m in Singapore

By Kevin Dona, Chemicals Correspondent

The Beecham Group is continuing its overseas expansion with a further £3m (12m Singapore dollars) investment in Singapore to double its production capacity there for synthetic penicillin.

During the last year it has made a number of overseas acquisitions and has also announced plans for an £11m-£12m French pharmaceutical plant at Shannon in Ireland.

A year ago it bought the Calgon consumer products business from Merck, in the U.S. for some £15m. Since then it has taken an 80 per cent share in the small French pharmaceutical company, Sobio, and earlier this month it announced plans to take over the North American animal health and veterinary business of Rohm and Haas, the U.S. chemical company, for some £9.5m.

In some £41m over the next three years on new pharmaceutical and chemical intermediate plants in Scotland and southern England.

The Singapore expansion will bring Beecham's total investment on the island since 1972 to some £2m. Singapore dollars, raising production to 400 tonnes of penicillin a year.

The new plant, which should be completed by mid-1979, will meet increased demand from Japan and South-East Asia. Some 98 per cent of production is exported to about 40 countries.

Beecham has also recently concluded a contract to sell 1m Singapore dollars worth of medical products to China and has been asked to send more delegations to Peking.

ICFC INVESTS IN FOOD MERGER

C. H. Dempster and Co., Liverpool-based food and drink manufacturers, is merging with Thirsty Pak, soft drinks manufacturers, of Blackburn, Lancs. A new parent company, Dempster Holdings, is being formed in exchange for the combined specialist potential of the businesses.

The combined organisation will be looking to extend the range of Dempster's branded products and enlarge the scope of Thirsty Pak's liquid packaging operation. The deal has been accomplished with the help of Industrial and Commercial Finance Corporation investing £77,500 in the new holding company, by way of a £25,500 loan and £52,000 as a subscription for 12,500 Preference Ordinary shares representing 14.9 per cent of the equity.

ABERDEEN PRESS

The Pergamon Press offer for the loan stock of Aberdeen University Press has been accepted in respect of £55,478 nominal stock (88.3 per cent). The offer has now expired.

ANSTON HOLDINGS

Mr. Raymond Stoner has succeeded in his bid to gain control of Anston Holdings, the Brighton-based flats and offices group of which he is managing director, through his privately-owned company Clerk's Ace (Hassocks) Ltd.

Mr. Stoner who originally held a 25.04 per cent stake in Anston, which went public in 1972 bid around £1.8m (at 76p a share) for the remaining equity he did not own. The offer was declared unconditional yesterday with CAH having received acceptances representing 97.78 per cent of the issued share capital.

The bid which valued the company at around £2.4m, was prompted after some of Mr. Stoner's directors, including Anston, had expressed a wish to retire and sell their stakes in the company. Mr. Stoner will become chairman of CAH. The bulk of the finance for the deal was provided by Amex Bank.

The offer will remain open for acceptance until further notice.

BELHAVEN BREWERY

At an EGM yesterday, shareholders in Belhaven Brewery Group approved the issue of £50,000 ordinary shares to the Bank of Bermuda, which is placing the shares with institutional investors.

After the meeting, Commonwealth Development Finance Company informed it was exercising its remaining option on £48,000 new shares in Belhaven, which would be retained as a long term investment.

Following the above share issues, the total issued share capital of Belhaven becomes £374,000. Holdings of major shareholders are now as follows: J. Lyons and Co., 16 per cent; Commonwealth Development Finance, 6.4 per cent; Gordon A. S. Harris, 5.5 per cent. Allied Breweries holds an option to acquire 7.3 per cent of the issued equity.

SHIPSTONE/NORTH. FOODS

Institutional investors are prepared to buy up to 1m. Ordinary shares — around 23 per cent of the equity — in James Shipstone and Sons, the Nottingham-based brewers which is currently conducting a takeover bid by Northern Foods.

In its latest defence document Shipstone says that the institutional investors, including its financial advisers, Kilmartin, Benson, would purchase the shares for not less than 300p, compared with Northern's bid price of 305p on last night's closing prices.

Shipstone a public but unquoted company that arranged a takeover would be concluded in accordance with its Articles of Association so that existing shareholders who wished to increase their stake would be able to do so. Selling shareholders would still retain the final dividend for the year ending December 31, 1977. The group said that Northern Food's contention that no one else would offer even 280p a share was "entirely without foundation."

Shipstone also announced that it had now concluded a formal valuation of its properties which had increased the group's net assets by 10p a share.

In addition Shipstone reported that its pre-tax profits for the year in December 31, 1977 increased to £2,027m, compared with £1,806m in 1976.

Northern Food's bid currently values Shipstone at almost £132m.

GADEK MALAYSIA

The Scheme of Arrangement made between Gadek Malaysia and certain shareholders has been sanctioned and has become effective.

Dealings in the new shares and stock of Gadek (Malaysia) Berhad issued pursuant to the Scheme will commence today.

Bridon falls to £11.61m.

DETERIORATION of markets and currency trends during the second half of 1977 produced disappointing results at Bridon, the directors state, in reporting a fall in taxable profits for the full year from £12.85m to £11.61m. However, including share of sales of associated companies was ahead from £248.9m to £275.1m.

At half-year, profit showed an advance from £5.82m to £5.76m, but the directors said it seemed likely that profits for the full year would show a decline from 1976 figures. The dividend may well be into 1978 before they see a recovery which they had been expecting.

Earnings per 25p share before extraordinary items are shown as 10.52p (18.52p) and the dividend is increased slightly to 6.148p (6.1107p) with a second interim of 3.843p.

A divisional analysis of profit before interest and including share of profits of associated companies is £15.73m. (£21.71m) shows in the U.K.: principal products £4.53m. (£5.82m); engineering £1.53m. (£1.57m); and the U.S. and overseas £9.67m. (£4.32m) and South America £1.14m. (£3.8m). A £4.53m. (£5.82m); Europe £9.84m. (£13.32m); and the U.S. and overseas £1.14m. (£3.8m).

The directors say that results from a thorough review of all divisions in the past year have led to a concentration of production in certain sections at home and abroad in fewer units, the cost of which has been provided for in the extraordinary charge of £3.04m. for 1977. Due to recent modernisation programmes there will still be ample capacity, they add.

Present forecasts show a similar fall in 1978. The directors say, however, that the tax charges should be nearer normal due to the anticipated elimination of unrelieved overseas losses. The benefits of concentration will be significant in 1979, they add. The group manufactures wire, rope, cable, fibre and plastic products and has engineering facilities.

Turnover 1977 1976
£275.1 248.9
Operating profit 11.61 12.85
Interest payable 4.14 2.51
Share of profits 22.81 22.20
Tax 1.80 1.80
Net profit 8.48 10.34
Dividend 6.148 6.1107
Interim dividend 3.843 3.843
Final dividend 2.305 2.267
£10.153 9.377

A spokesman for Bridon declined yesterday to give further details of the reasons for the fall in profits. However, it is understood that there will be further redundancies on top of those already announced. These might not necessarily be in the U.K. as the group has manufacturing companies elsewhere in the world, the principal ones being in Belgium, Canada, Mexico, New Zealand, South Africa and the U.S.

comment

Although some reduction was forecast, Bridon's 64 per cent fall in second half profits and the shares tumbling to close 10p down at a 1977-78 low of 99p. Competition and continued low demand for wire ropes eroded profits during that period were four and a half points lower at two per cent. The problem is widespread, with U.K. profits showing a one-third downturn in the second half of a year. There were some bright spots however — the U.K. engineering division boosted its contribution by 77 per cent to almost a tenth of total pre-tax profits (mainly through buoyant exports of rolling mill equipment) while a blits on manufacturing costs and overheads in South Africa boosted the African share by 18 per cent to almost 30 per cent of total profits. Meanwhile, Bridon is closing a number of factories around the world, but at present levels of demand, this will still leave surplus capacity of around 25 per cent. This, of course, will prove useful when the upturn eventually comes, but until then margins will continue to be squeezed. The shares are on a number of years.

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MINING NEWS

Union Corpn. has found a uranium mine

By Kenneth Marston, Mining Editor

THE REPORT in this column last July that South Africa's Union Corporation, now controlled by General Mining, was close to proving a new gold mine on the farm Palmietkui to the south of the group's St. Helena mine in the Orange Free State is now confirmed in the Union Corporation annual report.

However, the emphasis on the discovery is put on its uranium potential. Mr. E. Pavitt, chairman of Union Corporation, says that after a prolonged and costly exploration programme "we are now sufficiently encouraged with the results obtained to be in the final stages of evaluating a potential uranium-gold mine in the Orange Free State."

He adds that if a decision is made to bring the project to production "a very substantial cash investment will be required. Bearing in mind the caution with which such statements are worded by mining houses of this calibre, there can be no doubt that Union Corporation has a potential new mine."

It would thus appear that its go-ahead awaits the securing of satisfactory uranium export contracts and the provision of finance. While Australia's potential uranium producers still await permission to start up, the South African newcomer should have no difficulty in obtaining uranium contracts in the current seller's market for the nuclear material.

Obtaining finance for new South African ventures these days is not so easy but, as the recent East Rand Gold and Uranium (ERGU) launch has shown, money



JOHANNESBURG
Transvaal
NEW MINE
Orange
Palmietkui
St. Helena
Free State
LESOTHO

can be found if the terms are right. It is also possible that the big Anglo American Corporation group, which has also been exploring in the Palmietkui area, may be interested in some form of partnership.

Meanwhile the new R70m (192m) Union gold mine in the O.F.S., where Union Corporation is partnered with London's Selection Trust, is due to start trial stopping operations in the first quarter of 1979 and reach full production in November of that year.

ERGO is now commissioning and next year Anglo's Elandsrand and Gold Fields' Deersburg gold mines will also start up. Pavitt says, however, that gold production from these new ventures is unlikely to make up for the overall shortfall in output arising from the working out of older mines and the closure of marginal producers.

He thus feels that a further decline in the supply of newly mined gold—South African production in 1977 was the lowest for 16 years—will extend into the longer term with a consequent upward pressure on the gold price.

But he points out that the speculative and investment buying of gold, associated with the weakness of the U.S. dollar, has brought a degree of instability into the gold market and that some price reaction may well occur later this year.

Further views on gold came yesterday from Mr. Herbert Hartmann of West Germany's Degussa group. He, too, reckons that the price of the metal should continue to be firm over the long term. He said in Frankfurt that a further fall in the U.S. dollar rate together with a corresponding rise in the price of gold cannot be ruled out.

However, he pointed out that the possibility of gold sales by the U.S. Treasury continues to influence the market and hold the price from reaching a price of \$200 per ounce. He added that there are no definite signs that the U.S. Treasury intends to make any such sales although it does say that it keeps a watch on the market.

Mr. Hartmann added that industrial demand for gold is not expected to ease even if the price continues to edge up, while production should remain steady with sales from the Soviet Union being probably little changed from the annual average of 300 to 350 tonnes.

Hemerdon exploration widens

ENGLISH CHINA CLAYS, the UK's leading china clay producer, has agreed to allow exploration and possible mining on its land adjacent to Hemerdon Ball, outside Plymouth.

The extension of the geographical scope of the Amex-Hemerdon Mining exploration suggests that the size of the deposit could be bigger than first thought.

The first two phases of exploration have increased the previous known reserves "several times over," Mr. Schwarzwald said. His lack of precision is related to the talks he is having with Securities Exchange Commission in the U.S. for over-the-counter trading of Hemerdon Mining shares.

The previous known reserves were defined by British Metals Corporation in 1936-37 as 5.6m. short tons, assaying 3.5 lbs of wolfram and 1.02 lbs of tin per ton.

The next phase of exploration will involve 5,000 metres of diamond core drilling to about 600 feet and will lead to a detailed feasibility study costing £2m to £3m. It will be completed by 1980.

Trenching, geophysics and metallurgical testing will be undertaken in the next phase. It has been recognised in the industry for some time that the composition of the Hemerdon deposit is complex. When the mine was worked in

Plymouth. The ECC land is on the opposite side of the Ball from Plymouth. ECC already has extensive quarrying activities at nearby Lee Moor.

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World War I metallurgical problems were never solved.

Amex has the option to earn 50 per cent interest in the ore body, among other fees, by completing a work programme at the deposit.

Anglo American raises cash

AS PART of its continuing investment programme, South Africa Anglo American Corporation is seeking funds of R20m (£30m.) through the private placement of Preference shares there.

The parent company is raising R40m, and its 48 per cent direct owned Amgold, the gold investor, is raising R25m.

The Preference shares for both companies carry an interest rate of 10.5 per cent.

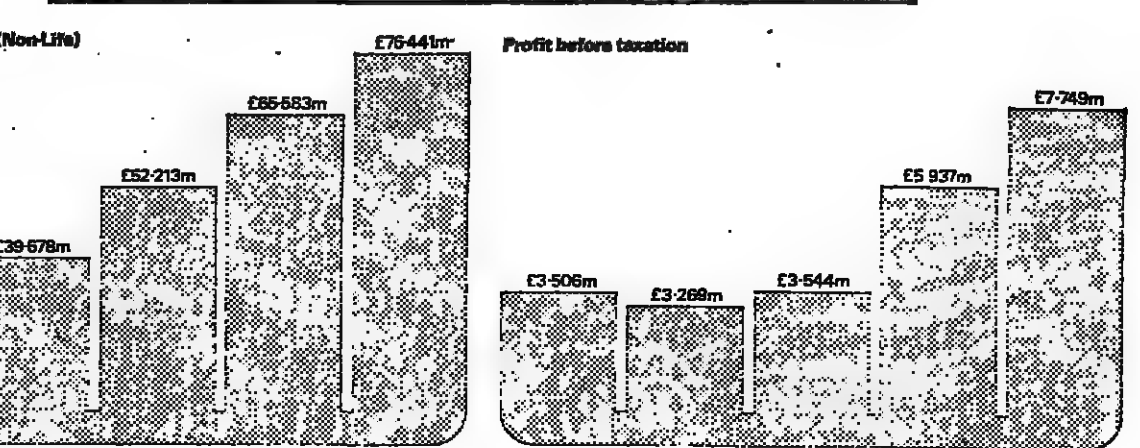
The Amgold issue will have an average life of four years and the Anglo American issue will have an average life of eight years. The shares are going to South African institutions. The placement will take place around July 1.

In London yesterday Anglo American shares were 30 1/2 and those of Amgold were £14 1/2.

Cornhill Insurance Group

Planned Growth and Increased Profit

RESULTS	1977	1976
Premium Income	£600	£600
Fire and accident	72,582	61,339
Marine and aviation	3,859	4,244
Life	7,716	8,544
Profits		
Underwriting results:		
Fire and accident	681	943
Marine and aviation	(300)	(725)
Investment income	7,247	5,647
Shareholders' life profits	75	—
Non-insurance company results	46	72
Profit before taxation	7,749	5,937
Taxation	3,850	2,875
Profit after taxation	3,899	3,062



1977 was another year of controlled expansion for the Group with non-life premium income rising to over £76 million and profit 30% higher than 1976.

UNITED KINGDOM The motor, liability, and engineering accounts all produced a satisfactory underwriting surplus. However, 1977 was a difficult year for the property account and, in particular, for the household section which was the major area of loss. The firemen's strike aggravated the problems of this account and may also have a noticeable bearing on 1978.

OVERSEAS The overall underwriting result improved considerably over 1976 but, nevertheless, there was a small loss. The strength in relation to overseas currencies, and in particular the Canadian dollar, limited growth when expressed in Sterling terms. Overseas business written in London produced a very good underwriting result.

MARINE AND AVIATION Market over-capacity, steeply rising marine repair costs and a number of airline losses contributed to a significant loss on this account.

LIFE Further substantial growth was achieved on regular premium income business. In 1977 Cornhill's Life division

declared its first reversionary bonus on "with-profits" policies and made its first contribution to Group profit.

FINANCIAL Investment income rose by 28% to £7.24 million. Shareholders' funds at balance sheet values at the year end amounted to £22,060 million. The solvency ratio, based on market values, remains strong at 97%.

OUTLOOK The differences in the results from the various territories demonstrates the importance of a wide geographical spread of business. The expansion of overseas activities will continue in 1978 to improve further the balance between the Group's interests in the United Kingdom and the rest of the world.

With inflation at a more tolerable level, better underwriting margins and more stable economic conditions can be foreseen. Cornhill plans further expansion and looks forward to 1978 and the years beyond with confidence.

Copies of the Report and Accounts may be obtained from the Secretary at 35 Cornhill, London EC3V 3JL.

Cornhill Insurance Group
A member of the Thomas Tilling Group.

MONEY MARKET Adequate credit supply

Bank of England Minimum Lending Rate of 6 1/2 per cent (since January 6, 1978). Preliminary indications pointed towards a substantial surplus of day to day credit yesterday's London money market, but with a slight swing, revenue payments to the Exchequer slightly outweighed Government disbursements, a reversal of earlier predictions. The market was also faced with a substantial net take up of Treasury bills. However with

Mar. 19 1977	Overnight	1 day</
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INTERNATIONAL FINANCIAL AND COMPANY NEWS

NORTH AMERICAN NEWS

Ford underpins industry confidence

BY JOHN WYLES

RENEWED CONFIDENCE in the U.S. auto industry that a sales recovery will offset recent months of decline in the market is highlighted by the Ford Motor Company's annual report. The company reaffirms its belief that 1978 auto sales, at "about 11m," will be only slightly lower than last year's 11.19m. Moreover, Ford expects record truck sales this year of 3.8m, compared with the new peak set in 1977 of 3.675m.

Ford's expectations for the passenger car market are looking a lot more credible following figures which suggest that consumers responded to dealers' sales contests in March in sufficient numbers to slow down the declining sales trend of the previous three months. During a 10-day period in the middle of the month, sales ran at a seasonally adjusted annual rate of a shade over 12m, which means that total monthly sales may match or not fall far short of last March's performance.

The three members of Ford's Office of the Chief Executive, Mr. Henry Ford 2, chairman, Mr. Philip Caldwell, vice-chairman, and Mr. Lee Iacocca, president, say in the company's annual report that the U.S. economy should continue its recovery from the 1974-75 recession although the rate of economic growth will decline somewhat toward the end of the year.

The three executives hint that they expect some relief from Japanese import competition this year. They point out that Ford's record sales and earnings last year were achieved in the face of sharp rivalry from Japanese imports which accounted for about two-thirds of imported car sales last year.

"One of the reasons for the strength of Japanese car sales in the U.S. market is the price advantage resulting primarily from the substantial disparity between Japanese and U.S. wage rates. The company's price position in relation to Japanese imports improved in late 1977 with the upward revaluation of the yen, which led Japanese manufacturers to raise prices of cars exported to the U.S."

With the dollar having dropped several points against the yen since these lines were written both Ford and General Motors have recently felt able to announce modest price increases on their small cars. The currency pressure on the Japanese producers is best highlighted by the Honda Accord which was launched in June 1976 at \$3,995 and, following a price increase in January, now sells for nearly 21 per cent more.

Leading auto industry analyst, Mr. David Healy of Drexel Burnham Lambert, estimates to-day that import sales in the U.S. will drop from last year's \$2,026m (18.3 per cent of the market) to \$1.9m, and that total U.S. car sales for the year will be 10.55m. Mr. Healy also predicts that Chrysler Corporation, which made a fourth quarter loss in 1977, will be in the red for the whole of 1978.

Court to rule next week on Curtiss-Wright

SALT LAKE CITY, March 30.

JUDGE David Winter of the Third District Court said to-day that he would definitely rule on whether Curtiss-Wright Corporation will be prevented from acquiring a 50 per cent stake in Kennecott Copper Corporation by noon on Monday.

The State of Utah requested the temporary restraining order (which was issued on March 21), and also sought a preliminary injunction against Curtiss-Wright, alleging the company of violating a Utah law by failing to notify the State 30 days in advance of a major stock purchase. Curtiss-Wright bought 8.9 per cent of Kennecott's shares in the 60 days prior to March 21, to bring its total holding to 9.9 per cent, which made it the largest single shareholder in Kennecott, the country's largest copper producer.

Acting assistant attorney general Keith Taylor, whose law firm represents Kennecott, accused Curtiss-Wright of statutory fraud, and said it was trying to emasculate Utah's largest asset. Kennecott is Utah's largest civilian employer and taxpayer.

Curtiss-Wright attorney Thomas Quinn said Judge Winter's temporary restraining order was a blatant attempt to protect entrenched management at Kennecott. He also said the order gives Kennecott an unfair advantage in preparing for the annual meeting in May.

AP-DJ

Carter attacks steel price rise

BY STEWART FLEMING

PRESIDENT CARTER and the president of America's largest steel company, United States Steel, clashed publicly to-day over the 2 per cent increase in steel prices which the company announced yesterday.

Mr. David Rockefeller, U.S. Steel's president, declared in Chicago that the company would resist any attempt by the federal government to force it to roll back the price increase. Within a matter of hours, vice-president Walter Mondale announced that both he and the President hoped that U.S. Steel would reconsider and reduce the size of the increase. Earlier in the day, the President had himself termed the \$10.50 a ton increase excessive, the 60 days prior to March 21, to bring its total holding to 9.9 per cent, which made it the largest single shareholder in Kennecott, the country's largest copper producer.

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AP-DJ

NBC slide fails to slow RCA

BY OUR OWN CORRESPONDENT

NATIONAL Broadcasting Company, firmly lodged in third place in the U.S. television network ratings, is expected to drop behind Herby this year as the RCA Corporation's chief profit.

This was confirmed to-day by Mr. Edgar Griffiths, RCA's president, whose disenchanted with NBC's performance prompted him to send a tremor through the television industry in January by recruiting the American Broadcasting Company's top programmer with the "Midwest touch," Mr. Fred Silverman.

Mr. Silverman is largely credited with taking ABC from number three to number one in the ratings battle in just over two years and RCA is hoping he will perform the same feat for NBC when he takes over as the network's president and chief executive in June.

Goodrich purchase

NEW YORK, March 30.

R. F. Goodrich has agreed in principle to acquire Continental Conveyor and Equipment in a transaction valued at about \$60m, reports AP-DJ from Akron. Under the agreement, Goodrich will acquire 100 per cent of the company's common shares while the option to receive the equivalent of \$40 in Goodrich Common or Preferred stock or to receive \$40 in cash for each Continental share, provided the total cash consideration does not exceed 40 per cent of the total consideration in the exchange.

Underlining the rationale for the increase to-day, Mr. Goodrich said that current demand for most products produced by U.S. Steel has increased substantially compared with the second half of 1977. He said that he believed the company had turned the corner from its projected loss for the first quarter of 1978. He predicted that the company would be profitable in the second quarter, and that there would be a continued improvement in the second half. Last year, U.S. Steel incurred losses on its steel-making operations, although the overall company, which has a variety of other businesses including chemicals, was profitable.

ABC \$50m sale

NEW YORK, March 30.

American Broadcasting Company is negotiating with Pili Theaters for the sale of all ABC's cinema operations for about \$50m, in cash and notes, reports AP-DJ from New York. At the end of 1977 ABC operated 91 single-screen, 79 twin-screen and three triple-screen cinemas, giving a total of 268 screens in 11 southern states. Pili operates about 140 cinemas in the mid-west and mountain and western states. Most of the Pili theatres were purchased from ABC in 1974.

Coal strike hits Ashland

NEW ORLEANS, March 30.

ASHLAND OIL anticipates "significantly lower earnings" in the second quarter ending to-morrow because of the coal strike, which has cut off oil refining and marketing profits and problems lost during the first two quarters.

However, the chairman did not predict whether earnings for the fiscal year will equal the \$164m, or \$5.80 a share on revenue of \$6.05bn, reported for the prior year.

AP-DJ

Pittston expects first quarter loss

PHILADELPHIA, March 30.

PITSTON, reflecting the close-down of its coal operations, because of the coal strike, estimates that it will have a loss in the first quarter ending to-morrow compared with an income of \$23m, or 61 cents a share, in the year earlier quarter, according to Mr. Walter Lahay, director of corporate relations.

Mr. Lahay said that sales would be sharply down in the first quarter from the \$403.5m in the 1977 first quarter because the company's coal division has been closed down for the last three months.

Net income for the full 1977 year will not match the \$71.3m, or 1.90 a share, in 1977. The 1977 net income included a \$3.9m special charge relating to settlement of claims resulting from the flood of a company dam in 1972. It also included a special charge of \$2.5m relating to the Government's suit against Brink's, which is 86 per cent owned by Pittston.

SEC may sue Beatrice Foods

WASHINGTON, March 30.

BEATRICE FOODS indicated that the nearly \$24m in questionable transactions disclosed last year could produce a lawsuit by the Securities and Exchange Commission (SEC).

The Chicago concern said in a stock registration statement filed with the SEC that it has been holding discussions with the Commission's enforcement division on the findings of an SEC staff investigation of Beatrice. The investigation, begun in June 1976, covered "one or more" of the matters described by the company in its questionable payments report of March 1977.

"As an injunction proceeding" as one of the possible actions, the SEC might take, Beatrice said in its latest filing. The SEC has previously obtained more than 40 Federal Court injunctions against companies accused of making questionable payments. Such orders, usually accepted by the defendant companies in settlement of an SEC suit, bar violations of reporting and other provisions of Federal Securities Law. The orders often require internal measures by the companies to prevent recurrence of questionable payments.

In its 1977 disclosure, Beatrice said it gave customers in 15 States questionable discounts totalling \$20.3m during a period from March 1, 1971, through October 31, 1976. The company also said it overvalued foreign currency customers about \$3.9m in the same period. The overvaluings may have been requested by Beatrice customers to avoid local currency or tax laws, the company indicated.

AP-DJ

Canadian Du Pont warns on earnings

By Robert Gibbons

MONTREAL, March 30.

DU PONT Canada's earnings and return on investment this year will remain at "unsatisfactory levels," a much stronger Canadian economy is needed before the company can effectively use its new expanded capacity in fibres, plastics and films, plastic products, packaging and chemicals, says president Mr. F. S. McCarthy.

The company is some 75 per cent owned by Du Pont of the U.S. and has nearly completed a \$500m expansion programme begun in 1972. It is a major equity partner in the Petrobrás petrochemical complex at Sarnia, Ontario. Part of its expansion has been financed by the parent company.

Du Pont Canada sees some pointers towards recovery in Canada, including the effects of the discount index, higher consumer spending encouraged by recent tax breaks, and generally renewed business confidence.

Lockheed cautious

LOCKHEED Corporation's projections indicate earnings from operations in 1978 "will be below those of 1977" when it earned \$55m, or \$3.71 a share, AP-DJ reports from Burbank.

Recently Lockheed has said that earnings for both 1978 and 1979 would be "fairly comparable" with 1977. In the annual report Lockheed did not specify how large an earnings decline it expects this year.

Firestone Tire

Firestone Tire and Rubber said a Federal District Judge granted an extension of a temporary restraining order that prevents the National Highway Traffic Safety Administration from releasing a survey on original equipment steel-belted radial tires critical of a Firestone line, reports AP-DJ from Cleveland.

Babcock merger

Following the special meeting yesterday Babcock and Wilcox president Mr. George Ziff affirmed his intention to stay on as president, reports AP-DJ from New York.

Babcock will retain its name and corporate identity following the merger into J. Ray McDermott.

Mineral growth boosts Agip sales and profits

BY PAUL BETTS

ROME, March 30.

AGIP, the main oil operating company of the State hydrocarbons group, Eni Nazionale Idrocarburi (ENI), to-day reported increased profits of L56.4bn (some \$86m) last year compared with L2.2bn in 1976. Group turnover increased by 19 per cent to L7,008bn (\$881m) on a year-on-year basis.

The sizeable increase in profits is chiefly due to the company's mineral activities, whose turnover recorded a major upturn last year, and to generally lower cost increases compared with the previous year, according to Agip.

The Agip Board proposes to use some L35.5bn of last year's profit to cover previous balance sheet losses, a further L2.5bn for reserves, and to distribute the remaining L15bn as dividends.

Agip's overall crude production totalled last year 12.7m tons, practically the same as the previous year, while the company's domestic natural gas production rose to 1.2 m tons.

Sale of Agip's main low area in 1977 was 5.6m, with sales rising 7 per cent in volume but only 4 per cent in value. Agencies reporting from Milan Debt servicing costs of Lire 86bn (\$106m) were a major factor in a net loss for the year of Lire 47.1bn, or some \$53m.

The Board also reported the setting-up of a separate Agip subsidiary, Agip Petroli S.p.A., which will group together the company's refinery and distribution activities. Agip Petroli S.p.A., which will group together the company's refinery and distribution activities, has been appointed chairman of the new subsidiary.

At the end of last December the financially troubled Borel International forecasted its 1977 operating performance in 1977 would result in a loss of more than Frs 250m, against a deficit of Frs 215m in 1976. At the time it was expected that the group would eventually move back into profits sometime in 1978.

Borel International lost some Frs 150m in 1977, on its Belgian operations in 1976 and a heavier loss was expected in 1977.

PARENT company net profits of Rhone-Poulenc, the fifth largest chemical group in the world, emerged at Frs 82.5m (\$304m) compared to Frs 121.1m last month the company reported that profits in 1977 for the group as a whole would be mainly unchanged.

The parent company results are after tax and adjusting for two major financial items. The first is the largest gain to Rhone-Poulenc arising from the sale of Frs 250m of the shareholding in St. Ives Laboratory and secondly, write-offs totalling Frs 400m, at Rhone-Poulenc Textiles.

Total dividend by the parent company is being held at Frs 9.50 a share.

Borel Belgique capital rise

BY OUR FINANCIAL STAFF

JACQUES Borel International is injecting fresh funds into its Belgian subsidiary. The move will allow the latter, Jacques Borel Belgique, to increase its capital and complete a programme of financial restructuring.

Borel Belgique will raise its capital by Frs 200m—around 35m in cash and Frs 165m in shares—by the end of 1978, according to Borel International in cash, with the balance in the form of a non-repayable loan. The extra capital will allow the Belgian company to carry out a restructuring plan decided on several months ago.

Under the plan Borel has agreed with AG Restaurants BV, subsidiary of the Dutch Ahold group, to sell some of this year's hotel and ten restaurants and to sell five motorway concessions in Belgium. The sum involved has yet to be disclosed.

Borel International will also sell parts of three of its four hotels in Belgium. This will leave the group free to concentrate on its profitable restaurant activities through mass catering in hospitals and schools and in catering for large companies.

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EUROBONDS Sharp falls in sterling issues

By Mary Campbell

THE dollar sector picked up somewhat yesterday, while D-Mark bonds were significantly better, dealers said. The main feature of the day, however, was the very sharp fall in the prices of sterling bonds for the third day running, as sterling itself fell on the foreign exchange markets.

One new issue has been announced in the dollar sector, \$50m of D-Mark bonds. In the D-Mark sector, the Spanish issue has been formally announced on the expected terms. Due out to-morrow are a DM100m issue for the Asian Development Bank and a DM200m issue for Light Services. It is still possible that the National Financiera placement may be launched before the week-end.

The sterling bonds have now fallen anything up to two points since the launching of the Gestetner offering, and dealers are inevitably questioning the level of demand for the two issues currently on offer for Gestetner and Whitbread.

The terms of the IG industries offering will include a seven-year final maturity (bullet) and an indicated coupon of 9 per cent. Merrill Lynch is a special bracket comprising Abu Dhabi Investment Co. Kuwait International Investment Company and UBAF.

A pricing of par is expected on the Rautaurukki DM50m, 6 per cent issue.

As far as D-Mark secondary market prices are concerned, dealers reported that the improvement was concentrated on the better quality names, with little if any improvement in the so-called exotic issues which have been the biggest problem recently.

Electrobra has signed agreements for a Y10bn private placement on the Tokyo foreign bond market. The 12-year bonds will pay interest at 7.8 per cent, with the price set at par. Bank of Tokyo is lead manager.

The Yen bond calendar for April is now clearer. In addition to the four scheduled public issues (Y15bn, for Asahi, Y25bn, for Daiwa, Y35.40bn, for Sanwa and Y15.20bn, for the Spanish Railway), four private placements are also expected. These would be for Yuhonbank, Trinidad and Tobago, Thailand and Chile.

VMF-Stork losses mount

BY CHARLES BATCHELOR

VMF-STORK, the troubled Dutch engineering group, reports a sharply increased loss for 1977 and expects to stay in the red in the current year.

The company, which has been offered Frs 350m of Government aid as part of a restructuring of Holland's heavy engineering and shipbuilding industries, made a total loss of Frs 132.9m (\$51m) last year.

This comprises a Frs 58.3m after-tax operating loss and a further Frs 74.6m in restructuring costs. In 1976 the company, which is the largest engineering group in Holland, made a Frs 12.8m loss.

The main reason for the poor performance is the continuing recession in the capital goods sector. This had the strongest impact on VMF-Stork's diesel engine division. Stork-Werkspoor, in aid by the unions claim there will be a loss of 6,000 jobs.

Diesel, which depends to a great extent on the shipbuilding sector, also affected its Bronswerk cessing, boiler making, industrial K.A.B. subsidiary which makes equipment and foundry division.

COMPANY ANNOUNCEMENT

ANGLO AMERICAN GOLD INVESTMENT COMPANY LIMITED

(Incorporated in the Republic of South Africa)

PRIVATE PLACING OF PREFERENCE SHARES

Agreement has been reached for the company to make a private placing on or about 1st July 1978 with certain local institutions of R25 million 10 per cent redeemable cumulative preference shares, which will carry no conversion rights. The issue will have an average life of approximately four years.

The proceeds of the issue will be used to reduce short-term borrowings of the company and to finance new investment commitments.

A general meeting of members of the company will be called to consider the necessary resolutions for the issue of the preference shares by the directors and a circular giving the notice of the meeting and full details will be sent to members in due course.

London Office:
40 Holborn Viaduct
EC1P 1AJ

Johannesburg
March 31st, 1978

SIRDAR

INTERIM RESULTS (unaudited)

	28 Weeks ended 14th January 1978	28 Weeks ended 14th January 1977	Year ended 30th June 1977
Turnover	£10,113,000	£8,214,000	£16,435,000
Trading profit	1,065,000	725,000	1,550,000
Interest	179,000	219,000	414,000
Profit before tax	886,000	507,000	1,136,000
(U.K. Tax 22%)	170,000	45,000	97,000
	716,000	462,000	1,039,000
Extraordinary items	22,000	20,000	41,000
Net profit after tax	£738,000	£482,000	£1,080,000
Earnings per share - pre-tax	11.0p	6.3p	14.1p
Earnings per share - after tax	8.9p	5.7p	12.9p
Dividends per share	1.26p	1.15p	2.7923p

CHAIRMAN'S STATEMENT

Results for the 28 weeks to 14th January 1978 show profits before tax increased by almost 75% on the corresponding period of last year.

Although trading in Europe continues to be difficult, the further improvement in the performance of Hayfield Textiles, an increase in the U.K. turnover of the group of 30%, and better margins have contributed to the best half-year results so far achieved by the group.

The high level of sales is being maintained and the improvement in the profit is expected to continue through the second half of this financial year.

SIRDAR LIMITED
P.O. Box 31, Alverthorpe, Wakefield, WF2 9ND, Yorkshire

THE UNITED STATES DEBENTURE CORPORATION LIMITED

Year Ended 31st January, 1978.

Extracts from the Directors' Report.

The Accounts

The Accounts for the year ended 31st January, 1978 are the first annual accounts following the merger with The London Scottish American Trust Limited and they combine the results of both companies for the year ended 31st January, 1977. The corresponding figures for the year ended 31st January, 1977 have been restated for ease of comparison as though the merger had taken place at the beginning of that financial year.

Dividends and Income

The after-tax revenue available for Ordinary Stockholders rose by 15.7 per cent, to £2,525 millions. As a result of this improvement, your Board are pleased to recommend that the total net dividend per stock unit for the year be increased by 15 per cent, to 3.52p (1977: 3.06p). This rise compares with an increase of 9.9 per cent, in the United Kingdom inflation rate as measured by the Retail Price Index. It is also gratifying that this rate of dividend has been possible against a background of continuing 10 per cent dividend reinvestment in the United Kingdom. It is interesting to note that over the last five years, your dividend rises totalled 84.3 per cent, compared with a 64.2 per cent rise in the national dividend on the Financial Times All Share Index. Going back as far as 25 years, the dividend after taxes at the standard rate received by a holder of 100 Ordinary Shares increased by 743 per cent. We earnestly hope that the Government will remove dividend restraint and that stockholders will once again receive a full reward for their investment in British companies. To restrain the rate of dividend that a company may pay is to meddle with a fundamental principle whereby stockholders are fairly remunerated for the use of their capital and rewarded for the risks involved. To continue dividend restraint is to continue to reduce the real income of pension funds, charitable organisations and many private investors who have no other source of income.

Net Assets

The percentage of your Company's total assets invested in the United Kingdom rose to 66.8 per cent (1977: 67.5 per cent), whilst the percentage in the United States of America decreased to 28.5 per cent (1977: 35.7 per cent.). This fall in the American content occurred not because of a policy on our part to reduce it, but simply because of the disappointing performance of the American stock market relative to that of the United Kingdom. Indeed, whilst the Financial Times All Share Index increased by 22.5 per cent, the Standard and Poor's Composite Index, as adjusted for movements in the investment currency premium and the exchange rate, fell by 22.6 per cent. On the same basis, the Toronto Composite Index fell by 18.4 per cent. Compared with these movements, the value of your Company's United Kingdom portfolio increased by 17.8 per cent, and the North American portfolio fell by 20.3 per cent.

The pound sterling exchange rate against the American dollar surged by 13.9 per cent. However, the strength in the pound, whilst nationally most acceptable, reduced the profitability of British companies involved in exporting or operating overseas. For this principal reason, the shares of such companies tended to under-perform the Financial Times All Share Index. Since it is our long-term policy to hold an above-average proportion of this type of company, it therefore follows that our United Kingdom portfolio was similarly affected.

We are glad that the British Government has at last removed the investment dollar premium burden penalty. This will make for a more flexible management of your overseas investments, and will mean that changes within the portfolio will be considerably cheaper to effect.

Main Features

	1978	1977
Gross Revenue	£4,604,855	£4,150,534
Per Ordinary 25p Stock Unit:—		
Earnings—Basic	3.77p	3.37p
Earnings—Fully diluted	3.74p	3.29p
Dividend	3.52p	3.06p
Net Assets	£77,684,414	£78,879,422
Net Asset Value per Ordinary 25p Stock Unit:—		
Basic	106.2p	105.4p
Fully diluted	105.7p	104.5p

The Annual General Meeting will be held on 3rd May, 1978 in London.

SELECTED EURODOLLAR BOND PRICES			
MID-DAY INDICATIONS			
	Mid	Offer	
STRAIGHTS			
Alecon Australia 8 1/2% 1980	96	96 1/2	
ANIC 5% 1987	94	94 1/2	
Australia 8 1/2% 1982	94	94 1/2	
Australian A. & S. 8 1/2% 1982	94	94 1/2	
Banque Paribas 8 1/2% 1982	97	97 1/2	
Boviet 8 1/2% 1982	97	97 1/2	
Can. Pac. 8 1/2% 1984	97	97 1/2	
Can. Nat. 8 1/2% 1984	97	97 1/2	
Compt. Nat. 8 1/2% 1984	97	97 1/2	
Denmark 8 1/2% 1984	100	100 1/2	
ECB 8 1/2% 1982	93	93 1/2	
ECB 8 1/2% 1987	93	93 1/2	
ECB 8 1/2% 1992	93	93 1/2	
EMT 8 1/2% 1989	98	98 1/2	
Greenspan 8 1/2% 1989	98	98 1/2	
Gov. Sec. 1985 Nov	101	101 1/2	
HL Paper 8 1/2% 1984	99	99 1/2	
Hutchinson 8 1/2% 1982	100	100 1/2	
Hydro Canada 8 1/2% 1982	101	101 1/2	
ICI 8 1/2% 1987	97	97 1/2	
ISE Canada 8 1/2% 1980	104	104 1/2	
Macmillan 8 1/2% 1982	104	104 1/2	
Marathon 8 1/2% 1982	97	97 1/2	
Midland 8 1/2% 1982	102	102 1/2	
National Coal 8 1/2% 1987	94	94 1/2	
National Westminster 8 1/2% 1982	101	101 1/2	
Newfoundland 8 1/2% 1982	101	101 1/2	
Norfolk 8 1/2% 1982	97	97 1/2	
Norfolk 8 1/2% 1987	97	97 1/2	
Norfolk 8 1/2% 1992	97	97 1/2	
Orle 8 1/2% 1985	98	98 1/2	
Porto Antares 8 1/2% 1981	98	98 1/2	
Prov. Quebec 8 1/2% 1985	101	101 1/2	
Prov. Quebec 8 1/2% 1988	101	101 1/2	
Reed International 8 1/2% 1987	97	97 1/2	
Reed 8 1/2% 1987	97	97 1/2	
Reed 8 1/2% 1988	97	97 1/2	
Reed 8 1/2% 1989	97	97 1/2	
Reed 8 1/2% 1990	97	97 1/2	
Reed 8 1/2% 1991	97	97 1/2	
Reed 8 1/2% 1992	97	97 1/2	
Reed 8 1/2% 1993	97	97 1/2	
Reed 8 1/2% 1994	97	97 1/2	
Reed 8 1/2% 1995	97	97 1/2	
Reed 8 1/2% 1996	97	97 1/2	
Reed 8 1/2% 1997	97	97 1/2	
Reed 8 1/2% 1998	97	97 1/2	
Reed 8 1/2% 1999	97	97 1/2	
Reed 8 1/2% 2000	97	97 1/2	
Reed 8 1/2% 2001	97	97 1/2	
Reed 8 1/2% 2002	97	97 1/2	
Reed 8 1/2% 2003	97	97 1/2	
Reed 8 1/2% 2004	97	97 1/2	
Reed 8 1/2% 2005	97	97 1/2	
Reed 8 1/2% 2006	97	97 1/2	
Reed 8 1/2% 2007	97	97 1/2	
Reed 8 1/2% 2008	97	97 1/2	
Reed 8 1/2% 2009	97	97 1/2	
Reed 8 1/2% 2010	97	97 1/2	
Reed 8 1/2% 2011	97	97 1/2	
Reed 8 1/2% 2012	97	97 1/2	
Reed 8 1/2% 2013	97	97 1/2	
Reed 8 1/2% 2014	97	97 1/2	
Reed 8 1/2% 2015	97	97 1/2	
Reed 8 1/2% 2016	97	97 1/2	
Reed 8 1/2% 2017	97	97 1/2	
Reed 8 1/2% 2018	97	97 1/2	
Reed 8 1/2% 2019	97	97 1/2	
Reed 8 1/2% 2020	97	97 1/2	
Reed 8 1/2% 2021	97	97 1/2	
Reed 8 1/2% 2022	97	97 1/2	
Reed 8 1/2% 2023	97	97 1/2	
Reed 8 1/2% 2024	97	97 1/2	
Reed 8 1/2% 2025	97	97 1/2	
Reed 8 1/2% 2026	97	97 1/2	
Reed 8 1/2% 2027	97	97 1/2	
Reed 8 1/2% 2028	97	97 1/2	
Reed 8 1/2% 2029	97	97 1/2	
Reed 8 1/2% 2030	97	97 1/2	
Reed 8 1/2% 2031	97	97 1/2	
Reed 8 1/2% 2032	97	97 1/2	
Reed 8 1/2% 2033	97	97 1/2	
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The Property Market

BY JOHN BRENNAN

Cool reaction to CLA changes

FEW cheers greeted this week's relaxation of Government controls over local authority land purchase under the Community Land Act.

The Act's many critics in the property market see the changes as minor adjustments to a basically unworkable scheme. And its supporters complain that insufficient finance is still preventing the "positive planning" aspects of the legislation from showing through.

Under the community land scheme local authorities are able to buy land and sell or lease it to private developers. But the authorities need Department of the Environment permission to borrow the purchase money for land acquisition. Now, lower interest rates and the upswing in the demand for development land has enabled the DoE to rescind earlier, restrictive guidance notes to the authorities on the operation of the scheme.

The key changes announced this week counter earlier guidance restricting loan sanctions to land where the acquisition costs could reasonably be expected to be recouped within two or three years. The DoE will now look favourably upon loan applications for land "where the net annual cash flow line shows a positive figure within a reasonable period of time."

In certain cases authorities will be allowed to buy land that shows, "much longer break-even dates, or even continuing losses provided that they can be offset by other, more profitable cases." And for the first time authorities

are invited to submit proposals for schemes, "even where the financial profiles are pessimistic," if they can put a case that "wider economic or social benefits outweigh the costs." The DoE will look particularly kindly on such potentially loss making purchases in the inner city development areas.

The DoE also promises discussions with the authorities to reinstate the rolling land purchase programmes, and block loan



Mr. Hugh Rossi, Conservative Party spokesman on building and land: "The community land scheme has proved to be one of this Government's major embarrassments..."

allocations that were considered when the CLA was first framed. The DoE has not, however, altered its budget for loan sanctions, which was slashed in the 1976 public sector spending cuts. The budget allowed £20m. in 1976-77, £32m. in 1977-78 and a projected £54m. in 1978-79 rising to £83m. in 1979-80 and to £102m. in the following two years.

The DoE relaxations have not shaken Mr. Hugh Rossi's commitment to abolish the CLA "at the earliest available opportunity." The Conservative Party's spokesman on building and land sees the scheme as "one of this Government's major embarrassments. It was heralded by Anthony Crossland as the Government's single most socialist measure and by John Silkin as a total solution to the land problem. But it has fallen flat on its face."

Mr. Rossi sees basic, irresolvable flaws in the scheme. He argues that local authorities, "by their very composition and nature do not possess the entrepreneurial skills necessary to identify land ripe for development. And he feels that the CLA, combined with "penal levels of Development Land Tax has discouraged private individuals from bringing forward land for development and has created a severe land famine which the house building organisations view with great concern."

Mr. Rossi's opposition is echoed by the British Property Federation, which has also called for the abolition of the CLA. The Federation believes that the relaxations may "give a spur to joint local authority and private developments." But it still "deplores" anything that makes it easier for the local authorities "to compulsorily purchase development land." And the Federation does not believe that, "it is necessary for land to pass through the hands of the authorities in order to be developed."

The Royal Town Planning Institute sees the move from short term financial considerations in

land purchase as a "vindication of planners' professional concern," and as a marked strengthening of the positive planning elements in the scheme.

The Institute feels that the wider scope for loan sanctions will help to overcome the problem of authorities, which, until now, have not taken up even the meagre budget allowed for by the DoE. And it "heartily welcomes" the prospect of rolling programmes of land purchase which, by doing away with individual loan investigations, would save considerable time and manpower.

But the Institute, which has a working party now studying the scheme, feels strongly that the overall DoE loan allocation is "clearly inadequate."

Clifford Dan, chairman of the Royal Institution of Chartered Surveyors working party on the CLA, is unmoved by the new DoE guidance. "Any removal of constraints," he says, "is of obvious importance to the local authorities. But they will in no way meet the fundamental problems of the scheme... what is needed is a thorough review of the total legislation."

Mr. Dan's working party, which reported earlier this month, considered a wide range of possible amendments to the CLA to overcome its current operational inadequacies. But the working party came down in favour of the Act's repeal and a transfer of its positive planning role to normal planning powers and taxation.

In Brief...

A PRE-LETTING on a new Birmingham office development at over 25 a square foot? Impossible? Well, accountants and Coopers and Lybrand are believed to be deep in discussion with Scottish Equitable Life Assurance on just such a pre-letting on the life office's 30,000 square foot scheme in the heart

of the city's professional area by Rackhams Stores on Temple Row.

Shipway, Doble and Earle Scottish Equitable's advisers are keeping quiet about the possible pre-letting negotiations around that rent are underway. The block should be completed in 1979 when the insurer will take a small office suite for itself, and separately market a 4,500 square foot ground floor banking hall.

Temple Row is, however, the exception that proves the general rule in Birmingham, where Bernard Thorpe and Partners calculate that there is still 800,000 sq. feet of modern office space standing empty in the centre and a further 500,000 sq. feet in Edgbaston, an overhang that keeps prime rents in the £2.50 to £3 a sq. foot range.

Low prime rents have all but killed the market for secondary space in the city, and this ailing market will be further hit with the completion later this year of the Property Services Agency's £7.5m. extension to its Five Ways centre. The new building will drain 350 civil service jobs from older property around the city.

Birmingham now represents the largest remaining area of void space in MEPC's portfolio — with 28,400 sq. feet at Attwood House in New Street, 113,000 sq. feet left in its Broadway scheme and 54,000 sq. feet left in Metropolitan House. In a drive to fill this space MEPC is to break new ground with a marketing campaign on television and local commercial radio. The commercials, running for five weeks from early April, are aimed at the real decision makers in potential tenant companies, the secretaries.

ALBANY Life Assurance, a subsidiary of the £3,000m. American General Insurance Group, made its first foray into property this



Priory House, Orpington, is to be the new headquarters building of the combined Harris Carpets/Queensway Discount Warehouses group. Harris, advised by Smith Melack, has taken a 25-year lease on Pine Buildings' 27,270 sq. ft. block at £3.65 a sq. ft. Hill, Welch and Co. represented Fine. The move releases Queensway's 13,700 sq. ft. offices at Norfolk Towers, Norwich, which agents are offering at £2 a sq. ft.

week with the £224,000 purchase of Maceress's (a BP subsidiary) warehouse on the South Braddon Trading Estate. Albany's new Property Bond Fund, advised by Knight Frank, and Rutley and Warburg Investment Management, set an 11.5 per cent. yield on the purchase, a discount price reflecting low reversionary prospects on high-rented space. Albany, which has U.K.-managed funds of £5m., is to expand the Property Bond with a bias towards £1m. and £1m. units. Sounds familiar.

SAVE, the conservation group, won't approve of Tesco's new superstore at Neasdon, to judge by its "scourge of Britain's High Streets" views on store architecture in Building Refurbishment magazine this week. But Tesco, which beat 50 others

to the contract for a store on British Rail's 46-acre site by Wembley Stadium, will no doubt survive the criticism. Tesco, advised by James Lewis and Co., beat Asda by a short head in the tender race. And English Property Corporation, a funded, it is believed, by Legal and General Assurance, emerges as the successful development backing to local developers Kyle Stewart in the 500,000-square-foot warehouse complex and 30-acre lorry park and road freight depot planned for the rest of the site. Nick Irvine, EPC's development expert, beat an alternative scheme proposed by Bernard Sunley and the French group Garmon.

Property Deals appears on Page 36

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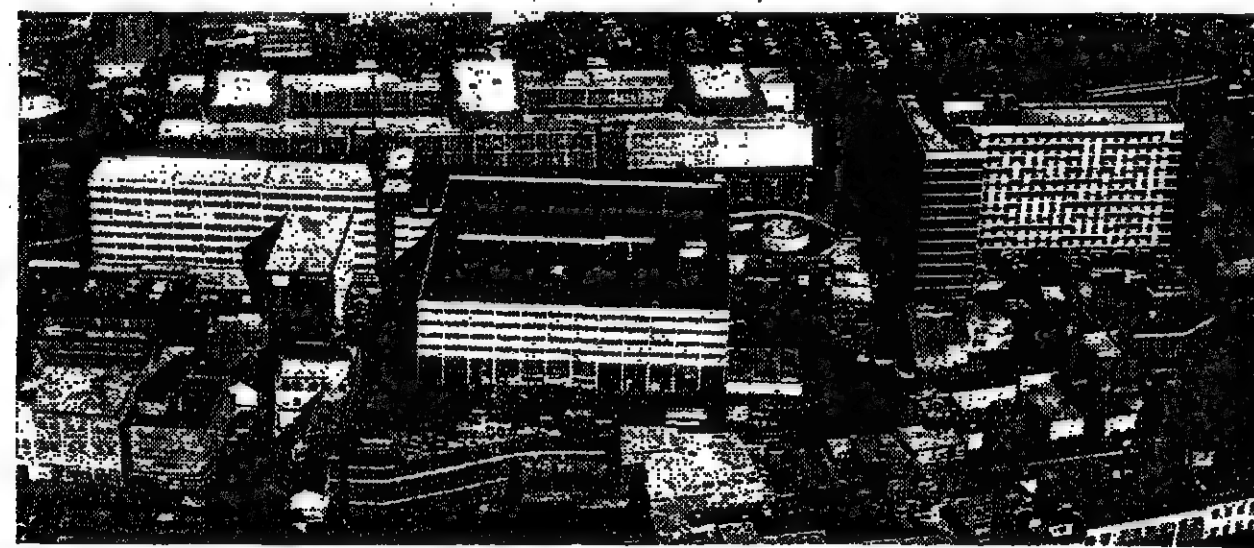
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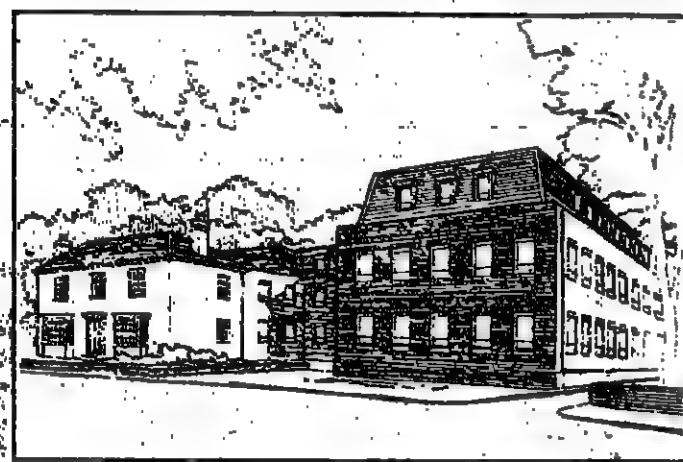
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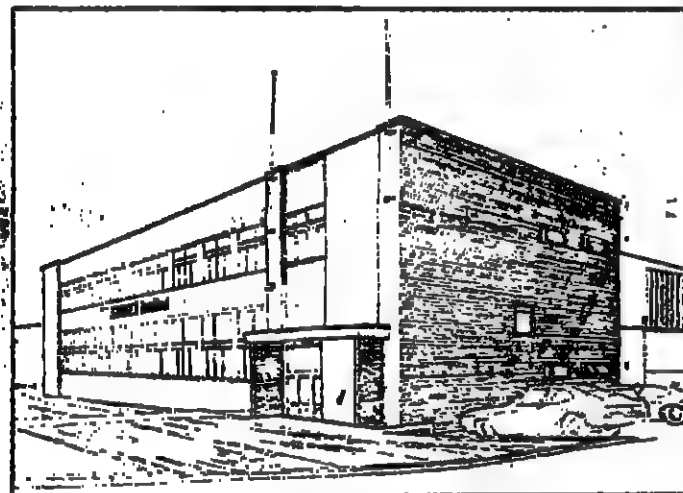
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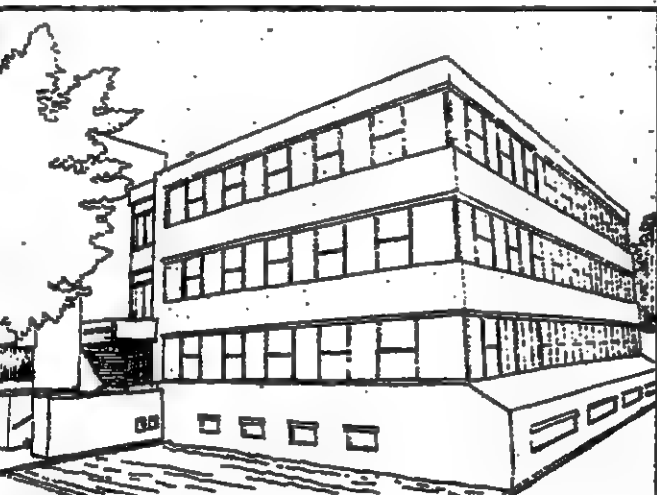
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PROPERTY DEALS

A 'safety net' for Fleming

JOHN Newman of The Fleming Property Unit Trust has rigged up an interesting safety net for the Trust's £3.5m. speculative warehouse development in Croydon.

Fleming has become funding partner to Godfrey Bradman's London Mercantile Holdings on Mercantile's 6.7 acre, former ICL site at Thornton Road, Croydon. Mercantile paid £1.25m. for the freehold site last autumn, and the developer, advised by Lambert Smith and Partners, plan to build 161,400 square feet of industrial and warehouse space over the next 18 months.

Fleming's financing deal includes a guarantee from the developer to pay the Trust 9 per cent. interest on development finance relating to any building standing empty a year after completion. In this way the Trust either gets its expected 5 per cent. net return on the warehouse, or 9 per cent. from Mercantile on finance provided for empty space.

This variation of a temporary lease-back to the developer provides additional security for the financing institution. But in this case, with a shortage of well located modern industrial space in Croydon, Fleming is unlikely to have to fall back on the void arrangements.

Around a third of the Croydon space has already been provisionally pre-let at more than the initial asking rent of £2.15 a square foot. Fleming and Mercantile share equally any benefit from lettings made at more than this base rent.

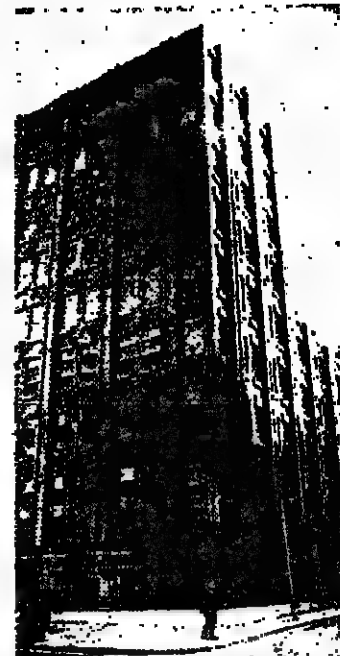
The Croydon scheme is Fleming's largest single investment in the first quarter of 1978, and brings the total value of the Trust to £89m. Mr. Newman feels that the current portfolio spread of just under 40 per cent. in offices, 17.4 per cent. in shops, 28.7 per cent. industrial and 4 per cent. agricultural land is a satisfactory balance for the time being, although he expects problems in maintaining the proportion of shop properties next year.

Mr. Newman echoes the recent comments of Cecil Baker, chairman of the £200m. Property Unit Trusts Group, who feels that property yields are now "historically low." But The Fleming director is less concerned than Mr. Baker about "overheating in the property market."

"We still have piles of propositions coming across my desk," says Mr. Newman, although, "much of it is rubbish." He feels that even in this seller's market there is still scope to invest the £25m. or so that flows into Fleming's Trust each year. "Yields are very low, and property is historically expensive. But the potential for growth, even at these levels is still good."

The £21m. Merchant Investors Property Fund takes the same line. In the March edition of its Investors' Bulletin 311 comments that "We would agree there is a danger that some buyers who are chasing after the strictly limited supply of new prime in-

vestments... may forget to do their arithmetic and invest at yields which can only be justified by rental growth of an optimistically high order." But the fund sees "no shortage of opportunities for attractive property investments." It buys "prime" in terms of location, but buys well above published "low" yields by taking on space where refurbishment, lease restructuring, marriage value of combining interests and so forth, give an added profit potential.



Ashley Shorrock

Computer group Honeywell I.S. has taken the remaining 19,418 sq. ft. of Land Securities' 30,000 sq. ft. redevelopment at 74-78, Finsbury Pavement, E.C.2. Land Securities' subsidiary, City of London Real Property, had been asking just over £11 a sq. ft. for the air-conditioned block. Knight, Frank and Rutley advised the developer, and Tony Charnock acted for Honeywell, which will move into the lower four floors below the other recently signed tenants, accountants Thompson McIntosh.

HUME Property Investments, a private investment trust, has sold its 2,000 year head leasehold (from the City Corporation) on Matheson House, EC3, to National Employers Life Assurance for £2.1m. The Life Office gets an initial yield of just 4.2 per cent. on the 17,000 square foot offices block. But a 35 year underlease to a Jardine Matheson subsidiary, Matheson and Co., comes up for its first seven-yearly rent review next year, and current rents of £5.16 a square foot show their December 1972 vintage. Hume was advised by Richard Ellis, Hampton acted for National Mutual.

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FARMING AND RAW MATERIALS

Stocks may halt nickel recovery

By Our Commodities Editor

JPRIUS STOCKS, and new reduction capacity this year will keep nickel prices from recovering until 1980, according to a long-term forecast prepared by Chase Econometric Associates, subsidiary of the Chase Manhattan Bank.

It predicts that there will be a modest improvement in nickel prices this year to no higher than \$2.30 a pound. The report claims that new reduction capacity coming on stream will continue to keep nickel prices high and prices low, visting cutbacks by Canadian and New Caledonian producers.

The outlook could change drastically if the dominant producers decided to continue producing at the current high rates to discourage entrants into the nickel industry. The report adds that under these conditions surplus stocks would not fall until the late 1980s and prices might even rise. New and marginal nickel-producing projects would dry up, restricting supply to 100,000 tonnes a year by the mid-1980s, a shortfall of 100,000 tonnes under demand. This could bring another round of shortages and materials substitutions, the report added.

A shortage of tin supplies is also forecast. The report comments that the age of low-cost Malaysian tin is past, and Malaysia will be lucky simply to maintain current output into the 1980s with the industry shifted to working lower-grade deposits.

The U.S. General Services Administration, with its 204,000-tonne tin stockpile, will have to become a major supply source if massive price increases for tin are to be averted in the short run, the report claims.

Indian tea exports reduced

NEW DELHI, March 30. India's tea exports in the first quarter of 1978 fell to the expected 230m kilos, but to ensure availability for domestic markets, the official tea auction agency reported a 10% reduction.

This quantity, valued at Rs.5bn (230m), compares with exports of 250m kilos, worth Rs.5.5bn, in 1977.

The report notes that international prices for tea increased sharply during 1977 because of low production in some countries such as Sri Lanka and a sharp decline in world coffee supplies.

Zambia to cut copper sales by 15%

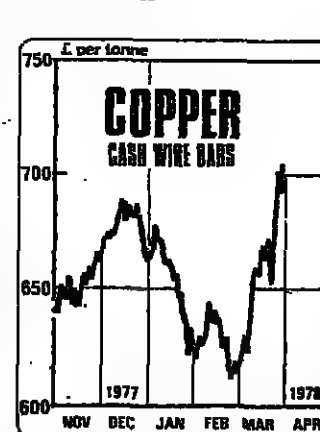
By JOHN EDWARDS, COMMODITIES EDITOR

COPPER PRICES jumped on the London Metal Exchange yesterday following an announcement by Zambia that it proposed to cut back supplies deliverable under long-term contracts with consumers by a force majeure declaration. But the market reacted when the cutback was put at 15 per cent, starting with May shipments, since a bigger cut of between 20 to 25 per cent, including April deliveries, had been generally anticipated. Cash wirebars eventually closed \$12.5 up on the day at \$704 a tonne, after having traded some \$10 higher earlier.

The Zambian marketing corporation, Memco, said the force majeure declaration reflected both production and transport constraints. Latest reports say that there are 50,000 tonnes of Zambian copper held up at the port of Dar es Salaam, and a further 10,000 tonnes is at the port of Mombasa. Cash wirebars eventually closed \$12.5 up on the day at \$704 a tonne, after having traded some \$10 higher earlier.

Mine production is also known to be hampered by difficulties in importing materials and equipment required. What is still not clear is whether the force majeure declaration takes into account the 15 per cent production cutback agreed by Zambia, Zaire and Peru earlier this month in an attempt to boost prices from year low levels.

Since then values have risen by nearly \$100 a tonne, partly anticipating a force majeure declaration by Zambia. Last year copper production in Zambia fell back to around 550,000 tonnes, the lowest output for ten years, and that basis a 15 per cent cut in sales would equal just over 8,000 tonnes monthly.



Brokers and market experts attempting to assess the impact of the changes came up with mixed interpretations. Most uncertainly centred on details of how much farmers would actually be paid for setting aside additional acreage.

One trader said the \$4.50 a bushel soyabean loan rate was not a major market factor at present but it could become increasingly important.

Sen. George McGovern (Dem. South Dakota) called the policy changes "little more than a cornucopia of problems."

He said an added proposal to pay feed grain producers for making idle land more than the mandatory 10 per cent of their land to serve only to graze wheat already planted instead of harvesting the crop will receive a payment of 50 cents a bushel or the target price for 40 per cent of the planted acreage, whichever was larger.

"We need higher target prices to get compliance with the 20 per cent set-aside programme and put 11m. acres out of production," he said.

Mr. Derral Schrader, a leader of the American Agriculture Strike Movement, said the Administration's actions "mean absolutely nothing for the farmer."

Zaire, which is suffering somewhat similar problems to Zambia, has chosen not to declare force majeure preferring to meet its commitments by fitting the short-fall with purchases from the world market. However it is likely to face further difficulties if the "wildcat" strike at the Katanga refinery in Belgium continues.

Official on Monday and leads to an extended stoppage. A large proportion of Zaire copper is handled by Hoboken.

So far Hoboken, and Sozacom—the Zaire copper marketing company—have said they will not declare force majeure for the time being. But this obviously depends on how long the refinery strike continues.

Meanwhile, Reuters reported from Paris last night that member countries of the Council of Copper Exporting Countries (Cipec) had not responded to a request by Zambia, Zaire and Peru to support their 15 per cent production cutback policy.

Chile has still apparently not indicated yet whether it will drop its previous opposition to the cutback, but there are expected to be fuller discussions at an executive committee meeting today.

CHICAGO, March 30. Brokers and market experts attempting to assess the impact of the changes came up with mixed interpretations. Most uncertainly centred on details of how much farmers would actually be paid for setting aside additional acreage.

One trader said the \$4.50 a bushel soyabean loan rate was not a major market factor at present but it could become increasingly important.

Upturn in cocoa market

By Richard Mooney

A LATE buying flurry boosted prices sharply on the London cocoa futures market yesterday, wiping out an early fall. The shake-out which wiped nearly \$50 off the May position on Wednesday continued in the morning when May cocoa registered another \$40 per cwt. rise.

The price slipped to \$1,995 at one time but its failure to pass through a major "chart support point" at \$2,000 triggered a dramatic turnaround in market tone and by the close May cocoa was quoted at \$2,063.5 a tonne, up \$18.50 on the day.

Dealers said the market's late strength reflected a continued lack of producer selling and a decision by Russia to "fix" prices on a significant number of export contracts at present levels.

This allowed the exporting merchants to buy on the futures market against earlier "hedging" sales. The upward move was expected to bring in scattered U.K. manufacturer buying and the weakness of sterling.

A further marginal "bullish" influence was a Department of Trade announcement that U.K. cocoa bean imports rose steeply in February. The month's total was 11,326 tonnes compared with 6,127 in January and 5,061 in February 1977.

Imports included 5,263 tonnes from Ghana and 4,250 from Nigeria.

Israeli fruit export earnings boosted

TEL AVIV, March 30. ISRAELI EXPORTS of fresh agricultural produce, other than citrus, have been spectacularly boosted in the current export season which started in October. This would represent an increase of 37 per cent on the 1976-77 agricultural year, according to Mr. Moshe Shavit, director of Agracris.

Agacris, which handles all exports of fresh agricultural produce other than citrus, has drawn up a five-year plan which aims at doubling the quantities shipped to 300,000 tonnes a year so as to reach sales totalling \$250m. by 1982-83—more than the current income from exports of citrus.

It intends to invest nearly \$10m. in the necessary infrastructure, mainly storage and handling facilities at Ben Gurion Airport and at Ashdod port, so as to permit the trebling of air-borne cargoes to 1,000 tonnes daily.

SUGAR

LONDON DAILY PRICE—Raw sugar 1180 (same) a tonne off for April-May shipment. White sugar daily price was \$24.00 (1200.00).

The market looked real buying interest over the morning and small selling orders came in to drive the price down and the market recovered all the loss gained, added by weaker sterling, C. Chambliss.

SUGAR. Yesterday's + or - Business Done. 2 per tonne. March 1180-1170 -10.00. April 1180-1170 -10.00. May 1180-1170 -10.00. June 1180-1170 -10.00. July 1180-1170 -10.00. August 1180-1170 -10.00. September 1180-1170 -10.00. October 1180-1170 -10.00. November 1180-1170 -10.00. December 1180-1170 -10.00. January 1180-1170 -10.00. February 1180-1170 -10.00. March 1180-1170 -10.00. April 1180-1170 -10.00. May 1180-1170 -10.00. June 1180-1170 -10.00. July 1180-1170 -10.00. August 1180-1170 -10.00. September 1180-1170 -10.00. October 1180-1170 -10.00. November 1180-1170 -10.00. December 1180-1170 -10.00. January 1180-1170 -10.00. February 1180-1170 -10.00. March 1180-1170 -10.00. April 1180-1170 -10.00. May 1180-1170 -10.00. June 1180-1170 -10.00. July 1180-1170 -10.00. August 1180-1170 -10.00. September 1180-1170 -10.00. October 1180-1170 -10.00. November 1180-1170 -10.00. December 1180-1170 -10.00. January 1180-1170 -10.00. February 1180-1170 -10.00. March 1180-1170 -10.00. 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OFFSHORE AND OVERSEAS FUNDS

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NOTES

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ESTABLISHED 1920 IN LONDON
28 St. George Street, Hanover Square,
London W1A 3BG 01-629 9292
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LONDON EC2M 1AR 01-628 4361

FT SHARE INFORMATION SERVICE

AMERICANS—Continued

BUILDING INDUSTRY—Cont.

DRAPERY AND STORES—Cont.

ENGINEERING—Continued

BRITISH FUNDS

Shorts (Lives up to Five Years)

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

Five to Fifteen Years

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

Over Fifteen Years

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

Conversion factor 0.6862 (0.6913)

CANADIANS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

BANKS AND HIRE PURCHASE

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

INTERNATIONAL BANK

CORPORATION LOANS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

COMMONWEALTH & AFRICAN LOANS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

LOANS

Public Board and Ind.

Financial

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

FOREIGN BONDS & RAILS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

AMERICANS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

BUILDING INDUSTRY, TIMBER AND ROADS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

ELECTRICAL AND RADIO

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

ENGINEERING TOOLS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

CINEMAS, THEATRES AND TV

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

DRAPERY AND STORES

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

FOOD, GROCERIES, ETC.

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

INDUSTRIALS (Misc.)

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

HOTELS AND CATERERS

Table with 5 columns: High, Low, Stock, Price, Div. Yr. %

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keep things rolling
FAG Engineering Co. Ltd.
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BELL'S
SCOTCH WHISKY
BELL'S

Northern attack on London plan for more jobs

By Anthony Moreton, Regional Affairs Editor

THE GREATER London Council was accused yesterday of trying to undermine the Government's regional policy by sponsoring a Bill in the Commons which would make it easier for companies to set up or expand within the 10 inner London boroughs.

Mr. John Hobbs, director of the North of England Development Council, said that the Greater London (General Powers) Bill, which has been through committee and is now in the queue awaiting a third reading, made a mockery of regional policy.

"We are very concerned at this move," he said. "Regional policy is designed to create a more balanced industrial nation and this Bill is against that whole concept. Given regional policy, I find it surprising this is happening. The rules are being changed and we should be told just what they are."

Pressure

In London, Mr. Hobbs was criticised for his comments and for a letter sent to the NEC, to all 40 northern MPs seeking their support in opposing the Bill.

Miss Shelagh Roberts, Tory leader of the GLC's planning and communications policy committee, said that Mr. Hobbs was "talking through his hat." It was no longer the case that London was as prosperous as it had been. "Parts of inner London have a higher rate of unemployment than that of the North East."

"It is high time that we caught up with the facts as they are. It is absolutely imperative that London has the ability to attract business and commerce. I hope the Government resists any pressure to prevent us having these powers."

The Government is known to be unhappy about one aspect of the Bill, which would allow the GLC to make certain loans. It opposed the clause in committee but was outvoted.

It is also unlikely to be happy about publicity being given to the Bill in the north. Ministers believe that their regional policy has gone a long way towards creating jobs for the assisted regions by steering firms away from the Midlands and the South East in particular.

Loans

Ironically, the GLC's Bill, which was introduced in the House of Commons last week, was a result of the council's Labour-controlled opposition should have emerged at this late stage.

Its clauses allow the GLC to build advance factories, make loans of up to 90 per cent. for the purchase or lease of building land, take a non-controlling equity interest in a firm, guarantee the rent of an industrial building and spend money on publicity.

Last night support for the Bill came from the NEC of all parties, who said they would watch the Bill closely when it came up for third reading.

Problem of urban decay, Page 12

Armed police kill two in new Iran riots

TEHRAN, March 30. A NEW WAVE of rioting and attacks on the police broke out in several parts of Iran today leaving at least two dead and seven wounded.

In Yazd, about 310 miles south-east of here, at least two people died when police opened fire on rioters breaking bank windows and attacking police with knives and stones. Reuter

Continued from Page 1

City launches securities body

It appears that the panel may well have a role in the future, according to the Bank of England yesterday, comprising: (a) the framing and amendment of codes of conduct and the consideration of proposed U.K. and E.C. legislation; and (b) the administration and enforcement of the Take-over Code and of any other codes and practices that may be established.

A markets committee is to be formed under the council to carry out the task of reviewing existing codes, including that on take-overs, and recommending any required new ones. Membership of the committee will be drawn from the council, but with the possible inclusion of other people from the City interests represented on it.

The markets committee would aim to resolve differences between different parts of the securities industry, particularly over the interpretation of codes of conduct.

While the staff of the new council, perhaps numbering half a dozen, has yet to be formed, the Take-over Panel already has members long accustomed to considering regulatory problems and long-established executive staff.

It appears that the panel may well have a role in the future, according to the Bank of England yesterday, comprising: (a) the framing and amendment of codes of conduct and the consideration of proposed U.K. and E.C. legislation; and (b) the administration and enforcement of the Take-over Code and of any other codes and practices that may be established.

A markets committee is to be formed under the council to carry out the task of reviewing existing codes, including that on take-overs, and recommending any required new ones. Membership of the committee will be drawn from the council, but with the possible inclusion of other people from the City interests represented on it.

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Higher pensions plan causes Cabinet split

BY PETER RIDDELL, ECONOMICS CORRESPONDENT

PROPOSALS to increase pensions and some social security benefits more than is legally required have led to a clash in the Cabinet.

The Department of Health and Social Security has proposed a 14 per cent. increase in the basic retirement pension in mid-November at the time of the usual autumn uprating. This would mean a weekly pension of £20 for a single person and £32 for a married couple.

This suggestion is being opposed by the Treasury which wants an increase of only 11 per cent.

The argument has become part of the wider Cabinet debate—to be resolved at a meeting next Tuesday—about how much of the contingency reserve for additional public spending in the next financial year should be committed now.

It is also clearly overhauled by the political discussion about what should be offered ahead of a possible October election.

The Treasury has its view on the 1978 Social Security Act, under which pensioners get other long-term social security benefits should rise each year in line with the increase in earnings or prices, whichever is the greater.

The official estimate is that the average earnings will rise by 11 per cent. and retail prices by 8 per cent. the year to this autumn. The increase in the real value of pensions in November implied by this formula has been allowed for in the existing public spending plans.

However, the further rise proposed by Mr. David Lunn and Mr. Stan Orme, the two social services ministers in the Cabinet, would mean a 14 per cent. contingency reserve of £110m. in the next financial year and of roughly £250m. in 1979-80.

They argue that an increase in the basic retirement pension to be announced either in the April 11 budget or in May as last year to a round figure of £20 for a single person would have a favourable economic impact and would represent a needed shift of resources.

The Treasury argues that basic pension increase alone that it is a "one-off" measure, formula would produce an undesirable ratchet effect, establishing a permanently higher base for future rises.

There is believed to be considerable sympathy for this view among ministers.

The Treasury believes the Government should be cautious about increasing the real value of social security payments and the extra implied load on the tax

Minister not ready to intervene in Fleet Street

BY PAULINE CLARK, LABOUR STAFF

THE Fleet Street labour crisis goes into its fifth day this morning with little hope of an early solution to the dispute affecting London national newspaper suppliers and an end to the engineers' action which has lost the Times Newspapers group some 3m. copies this week.

The Federation of London Wholesale Distributors appealed to Mr. Len Murray, general secretary of the TUC, asking him to persuade the Society of Graphical and Allied Trades, the union involved in the distributors' dispute, to go to arbitration.

But the Department of Employment said in a statement that Mr. Albert Booth, Secretary for Employment, was unwilling to intervene at this stage because it would be "counter-productive" to the negotiations now taking place.

Mr. Booth, who was said to be constantly in touch with the situation, was responding to a call by Mr. James Prior, Conservative spokesman on employment, for Government intervention.

Mr. Prior referred to a "very damaging dispute which must be quickly resolved." He argued that since the pay policy was the central issue, the Minister should call the parties together so that mediation could begin.

Members of the wholesalers' federation met in the morning for further talks on the refusal of members of SUGAT to handle national newspapers for London distribution in support of an overtime claim.

They then spent more than an hour with the Newspaper Publishers' Association, but neither meeting produced plans or talks with union leaders today.

Mr. Bill Keys, general secretary of SUGAT, was scheduled to fly to Scotland last night for an internal union meeting.

A new formula aimed at avoiding a breach of the Government guidelines in the overtime claim was presented by the union to the employers' discussions.

The NPA said after yesterday's meeting that it stood by the firm line taken by the wholesalers in refusing to make a payment above the 10 per cent. limit.

The federation stated last night that SUGAT members had already been offered a 10 per cent. increase on the overtime payments in dispute with a promise to talk about possible productivity arrangements. But it refused to subsidise overtime payments for handling late national newspaper copies which were normally reimbursed by the publishers.

SUGAT members who earn £100 a week with overtime making up a significant part of their wage packet have already refused arbitration, although this is part of the dispute procedure.

There was also no sign yesterday of moves towards a solution to the separate dispute involving members of the Amalgamated Union of Engineering Workers employed by Times Newspapers.

A meeting of union national area and chapel officers was said to have produced no new proposals for a return to work in spite of a recent management offer to hold productivity talks.

The group has lost all production of the Times this week and also issues of the Sunday Times. The Times Educational Supplement and the Literary Supplement.

The Guardian, which uses the Times presses in London, has also been affected, although it continues to produce its Manchester editions.

Bonn takes friendlier attitude to U.S. economic problems

BY JONATHAN CARR

THE United States and West Germany today began detailed preparations for the Western Economic Summit Conference in Bonn in mid-July.

Mr. Henry Owen, personal assistant to President Carter, discussed the agenda with Count Otto Lambsdorff, the Economics Minister. He will meet Chancellor Helmut Schmidt next week.

Bonn-Washington relations have improved markedly—not least because of Herr Schmidt's recent public references to the inviolability of the alliance between the two countries.

The West German side is also happy about this month's accord with the Americans to help stabilise the dollar, and the apparent willingness to do more if needed. Almost nothing is now heard among officials about "benign neglect" of the U.S. currency.

The problem which provoked the mutual criticism earlier this year—that of growth prospects for the West German economy—still remains.

The Germans are gradually coming round to the view which the Americans have held for some time, in spite of reassurances from Bonn: that 3.3 per cent. real gross national product growth will not be possible this year after all.

Herr Schmidt last week expressed doubts whether the aim could be achieved because of currency unrest since the 1978 targets were drawn up. Today, Count Lambsdorff cited this year's tough wage round, accompanied by strikes, as another reason why the growth figure would probably have to be revised.

Mr. Owen is unlikely to receive an immediate indication of what Bonn will do to help make up the lost ground.

The Federation of German Industry today urged new tax cuts—though this is only one of a series of steps open to the Government which could be taken after the package deal at the July summit.

Bonn welcomes U.S. pact, Page 3

Leyland tops U.K. market with 28%

By Arthur Smith, Midlands Correspondent

LEYLAND CARS has regained leadership of the U.K. market from Ford this month with more than 28 per cent. of total sales—a dramatic recovery from the 21 per cent. level at the beginning of the year.

Mr. Ray Horrocks, joint managing director of B.L. Cars, announced what he termed "the good news" in London last night. But he went on to give a warning of the long-term danger to Europe's native car manufacturers posed by the Japanese and the American multi-nationals.

He was particularly harsh in his comments about "the Japanese onslaught" and raised the prospect that Europe might have to erect some form of import restrictions.

Time would tell whether the Japanese would honour their present commitment to limit sales. But Mr. Horrocks was laying down capacity for an additional 2.5m. cars, and Europe was probably the only market offering the real possibility of new sales over the next ten years.

Mr. Horrocks said he preferred to take on the Japanese in a free market. But, he added: "For too long, while Britain played to the rules, the Japanese have raised the game so they could not lose and we could not win. So it may well be that Europe will be forced to fight off the Japanese onslaught with some form of import restrictions."

Mr. Horrocks also posed the question of what would happen to the Continental motor industry as the American domestic manufacturers switched their enormous production capacity over to European-style models in the interest of fuel economy.

If we are to stand up to the new wave of competition from the Japanese and the Americans then the European manufacturers must work more closely together," he said.

Companies did not need to sink their identities into an anonymous European car, there were important areas where manufacturers could pool resources for the design and manufacture of common components, such as engines and transmissions.

"I am confident that a resurgent British Leyland will play its part," Mr. Horrocks said. Leyland has been holding discussions with Renault about common components.

Mr. Horrocks said for B.L. cars the biggest problem would be to raise productivity to the level of its European competitors.

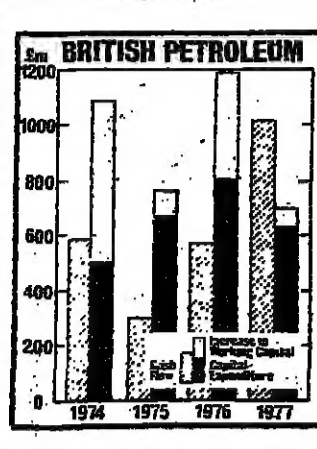
Lucas fights its £11m. handicap

THE LEX COLUMN

There are no nasty surprises in the Lucas half-time figures. The drop of £7.1m. pre-tax to £27.6m. is more than explained by the £11m. cost of the tool-makers' strike last summer, and the Lucas share price was strong yesterday—at 275p it has regained a third of the 100p drop to 240p between September and the beginning of March. Confidence within the group has been largely repaired by the fast improving trend, which has led to internal estimates of sales and profits in February—the first month of the current half-year—being well up on the comparable 1977 figures, and the interim statement is talking cheerfully about recent firm demand being maintained. If operations continue to tick over smoothly there is a chance that Lucas will make good the shortfall during the second half, which would require some £50m. before tax for February-July against £42.6m. last year.

A strong demand for vehicle equipment in Europe is the key factor. Leyland business is recovering some of its former volume thanks to much higher sales. Fortunately, Reckitt's North and South American business moved ahead well and along with Africa these three areas contributed close to 90 per cent. of the profit improvement. However, there is still no real sign that Reckitt's heavy investment in its "wonder drug" is paying off.

Index fell 0.4 to 467.7



ordinary charges of £6.6m. On the other hand, EPC has not considered it necessary to write a £38m. deficit on Brussels office developments into the balance sheet: the report suffers a qualification from auditors Stoy Hayward as a result.

Although capital commitments already contracted for amount to only £22m., the EPC Board informs shareholders that it has additionally authorised £70m. for capital spending "when financial and other arrangements have been satisfactorily concluded."

House of Fraser

In common with Woolworth, which reported earlier this month, House of Fraser has enjoyed a bumper fourth quarter. Although sales growth slackened to just 10 per cent., the final three months, pre-tax profits are a fifth higher, and for the full year are £8.5m. ahead at £36.2m. (including a £1.5m. surplus on property sales).

Like Woolworth, House of Fraser has been keeping a tight control on operating costs—it negotiated a 10 per cent. annual pay increase last July. However, whereas last year it was the London stores that were setting the pace, with Harrods reporting sales increases of over 30 per cent., the emphasis has now switched to the provincial outlets where sales volumes are now reportedly running around a tenth higher in some cases. Consequently, House of Fraser's profits should show another healthy increase in the current year but with two-thirds of the profits arising in the final quarter it is much too early to forecast the extent of the improvement. At 145p the shares yield 3.0 per cent.

BP

The oil majors' first disclosures in the area of segmental reporting are proving distinctly tentative. BP, for example, copily butters a veil in its annual report and reveals the devastating information that 96 per cent. of its operating profits come from petroleum, with around 3 per cent. from chemicals. Assets, by way of contrast, are elaborately broken down between production, tankers, refineries, marketing and chemicals. There are no corresponding profit disclosures, but when pressed BP will admit that it would be better off if it did not own any ships or operate any refineries.

Question time and Budget stars of 'Radio Commons'

BY RUPERT CORNWELL, LOBBY STAFF

THE twice-weekly sessions of the Minister's question time and the Commons' April 11 Budget are the star attractions of the initial phase of permanent sound broadcasting of the Commons which starts on Monday.

The BBC and IRN, the independent radio news service which will provide Parliamentary questions on commercial television and radio stations, yesterday announced plans and both are confident they will achieve a significant rise in audiences.

The first live item will be the Commons' question time on Monday afternoon, exactly two years and three months after the four-week broadcasting experiment in June and July of 1975, when more than 2.2m. people tuned in to the inaugural programme from the Commons.

Mr. Peter Hardiman-Scott, chief assistant to the director-general of the BBC, said yesterday that live radio would be "part of the continuing reform of Parliament" and help strengthen the country's democratic workings. He hoped that television would follow, perhaps within five years.

Both services will be run from temporary headquarters at 1, Bridge Street, immediately opposite Big Ben. Both plan a flexible mix of direct coverage of Parliamentary highlights and recorded extracts for radio and TV news programmes, as well as for special daily bulletins of Commons proceedings.

Weather

U.K. TO-DAY		W. Midlands, Channel Isles, Wales, Isle of Man, S.W. Scotland, Argyll, N. Ireland	
RAIN, spreading from W. brighter later. Rather warm in parts of S.		Rain at times, becoming brighter. Wind fresh to strong. S. to S.E., veering S.W. Max. 11C (52F).	
London, S.E., E. Cent. N. England, E. Midlands, E. Anglia S. Bright, occasional rain later. Wind S. fresh or strong. Max. 10C (50F).		N.E. England, Borders, Edinburgh, Dundee, Glasgow, N.W. Bright, occasional rain later. Wind S. to S.E., fresh or strong. Max. 10C (50F).	
BUSINESS CENTRES			
Y-day	Y-day	Y-day	Y-day
Mid-day	Mid-day	Mid-day	Mid-day
C	C	C	C
Amsterdam	19	19	19
London	19	19	19
Paris	19	19	19
Frankfurt	19	19	19
Berlin	19	19	19
Munich	19	19	19
Stuttgart	19	19	19
Düsseldorf	19	19	19
Cologne	19	19	19
Brussels	19	19	19
Geneva	19	19	19
Zurich	19	19	19
Basel	19	19	19
Lucerne	19	19	19
Bern	19	19	19
Neuchâtel	19	19	19
Lausanne	19	19	19
Geneva	19	19	19
Paris	19	19	19
London	19	19	19
Amsterdam	19	19	19

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